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Stress Among Prospective Teachers: a Review of the Literature

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Abstract: Student-teacher distress has the potential to impact on the individuals who are to become teachers, the profession and the education system. This review examines what is known of psychological distress among university students, teachers and student-teachers, the demands associated with their practical experiences and the known impact of psychological distress. A brief overview of contemporary stress management approaches is also presented. The reviewer contends that the potential problem for prospective teachers requires a holistic approach, beginning through understanding contemporary strategies available to individual university students, and preventative stress management programs provided within tertiary education, which may be made available to future student-teachers.

Much is known anecdotally about the stressors on teachers, especially following the ever-increasing demands of change associated with developments in technology, and curriculum. There is a considerable body of literature reviewing psychological distress in the general population (*Australian Bureau of Statistics. National Survey of Mental Health and Wellbeing: Summary of Results. ABS Cat No. 4326.0. Canberra: ABS, 2007*), and among university students, but these are mostly in health-related faculties (Dyrbye, Thomas, & Shanafelt, 2006; Humphris, Blinkhorn, Freeman, Gorter, Hoad-Reddick, Murtomaa, O'Sullivan, & Splieth, 2002) rather than education. Similarly, strategies for stress management have been focussed in health faculties (Pritchard, Wilson, & Yamnitz, 2007). Whereas well-being studies identify teacher stresses (Montgomery & Rupp, 2005; Pillay, Goddard, & Wilss, 2005), less attention has been paid to the demands of the practicum and the mental health and well-being of student-teachers. This paper examines 21st century psychological distress, demands associated with the student-teachers' practicum, the impact of distress, and strategies presented for coping and well-being. The review highlights the ramifications for student-teachers who may be distressed, and an overview of stress management practices offers potential directions for teacher education.

Psychological distress research appears to occur primarily in health care. It is seldom defined as a distinct concept. Physician Hans Selye articulated the term distress to explain the impact on the body of arousal through stress (Selye, 1982). The term psychological distress has since been embedded within the context of strain, stress, and distress (Ridner, 2004), and incorporates anxiety and depression, as these two disorders commonly co-occur (Bultmann, Huibers, Van Amelsvoort, Kant, Kasl, & Swaen, 2005; Hirschfeld, 2001).

In Australia, the approved Medicare "Initial Formulation to GP by MBS Allied Health Practitioner" is based on depression, anxiety and stress scores obtained using either the Depression, Anxiety and Stress Score (DASS 21) (<http://www.medicareaustralia.gov.au/public/forms.jsp>), or the K10. Thus, in this paper,

psychological distress refers to a mental state that incorporates depressed mood and anxiety (Dammeyer & Nunez, 1999; Humphris et al., 2002; Sherina, Rampal, & Kaneson, 2004; Wong, Cheung, Chan, Ma, & Tang, 2006), and may be experienced as anxiety (Dyrbye et al., 2006) and/or depression (Jorm, Christensen, & Griffiths, 2006).

In the Global Burden of Disease study (Murray & Lopez, 1997), it was predicted that by the year 2020 depression would be second only to heart disease. That report also indicated that mental disorders, and alcohol-use disorders, were linked to disability, and death by suicide.

The prevalence of psychological distress, as defined above, referring to a mental state characterised by anxiety and mood states (including depression), and also alcohol use in tandem, was also reported in the 2004-05 Australian National Health Survey, conducted by the Australian Bureau of Statistics (ABS, 2006). In that survey, 13% of the Australian adult population had high or very high levels of psychological distress. Of these, 45% included both anxiety and depressed mood. The findings indicated that the greatest increases in the prevalence of psychological distress were among people aged 18-24, and females aged 35 years and over, particularly women who were separated. This was significant, as the primary teaching profession in Australia is predominantly female, (Source: ABS 1986 and 2001 Censuses of Population and Housing 4102.0 - Australian Social Trends, 2003).

Levels of psychological distress have been reported to be greater among the university students than among the general population, and were reported in various university faculties world-wide (Wong et al., 2006). In that study, the prevalence of psychological distress was of moderate severity (depression: 21%, anxiety: 41% and stress: 27%). It was expected to impact on the students' educational attainment and quality of life, and these students were likely to suffer impairment, and require attention from health-care professionals.

The high levels of psychological distress among students constitute a serious health concern for those affected. At the Karolinska Institute of Medical University, Stockholm, Sweden, 12% of students were anxious, or had depressed mood (Dahlin, Joneborg, & Runeson, 2005). Among those students, there was an association between stress factors, including financial concerns, worry about the future and workload, gender and depression.

In a larger US study of approximately 2,500 undergraduate students who were sent a web-based survey (Eisenberg, Gollust, Golberstein, & Hefner, 2007), the estimated prevalence of depressive and/or anxiety disorders was 15.5%. Of these, 2% had suicidal thoughts. Although the rate of responses was less than 50%, despite a non-response bias, 44.3% reported that emotional or emotional difficulties had affected their performance in the previous 4-weeks, and there were strong associations between anxiety disorder and major depression (13.8% had major depression). There was less psychological distress in the group who were older than 25 years of age, and among those who lived on campus (not with parents) or with a partner (were not single).

Academic pressures, social issues and financial problems may cause stress for university students (Vitaliano, Maiuro, Russo, & Mitchell, 1989). An Australian survey of university students found high levels of psychological distress among students attending a university health service (Stallman, 2008). However, those students over the age of 24 had higher levels of psychological distress. In that study, 53% of students had significant (moderate, high and very high) levels of psychological distress. There was a higher level of psychological distress in all age groups, when compared to the general population results from the 2001 National Health Survey (Australian Bureau of Statistics), but there were no significant gender differences.

Stress levels among practising teachers are high. Kyriacou (2001) reported that 37% of teachers were stressed. Teacher distress has been reportedly greater than for the general population (Tuettemann & Punch, 1992). Their investigation, conducted with a large sample

of teachers in Western Australia, revealed that 45% of Australian secondary-school teachers were psychologically distressed. Distress was related to whether or not the teachers perceived themselves to be effective, supported by their colleagues, and if they received recognition for their work. This proportion of psychological distress was “twice that for the general population, and perhaps four times as high as that for the professional population” (Tuettemann and Punch, 1992, p. 44).

, Little literature on the measurement of psychological distress among student-teachers has been found. The student-teacher and/or teacher may not recognise the symptoms, therefore their distress, which includes anxiety, may be untreated. This is significant as the presence of an anxiety disorder is described as the single biggest clinical risk factor in the development of depression (Hirschfeld, 2001). Therefore, the scope and impact of depression and anxiety among student-teachers and teachers is highly significant. Of the few international and Australian studies specifically devoted to student-teachers (Chan, 2002; Chaplain, 2008; Zimmermann, Wangler, Unterbrink, Pfeifer, Wirsching, & Bauer, 2008), what there is tends to focus more on student-teachers' reflections about their experiences *during* their Teaching Practice, usually called the Practicum (Sumsion & Thomas, 1995).

Demands Associated with Practical Experiences

Well-being studies in the field of education have identified stress and job demands among teachers (Griva & Joekes, 2003; Pillay et al., 2005; Tuettemann & Punch, 1992). These professional demands impact on of teachers' psychological distress (Guglielmi & Tatrow, 1998; Schonfeld, 1992). In the US, female teachers' work environment was highly correlated with depression, job satisfaction and motivation (Schonfeld, 2000). In Finland, teaching was linked to burnout, and the ill health of teachers, whereas motivation and teacher well-being was linked to feeling engaged, and supported by the organisation (Hakanen, Bakker, & Schaufeldi, 2006).

Student-teachers may also experience stress associated with job demands when they attend schools for practice teaching., as found in a UK study with secondary school student-teachers(Chaplain, 2008). In that study, 38% of student-teachers were psychologically distressed following their practicum experience They identified behaviour management, workload and lack of support as significant professional demands impacting on their stress levels. Overall, they felt that their teaching experience had been extremely stressful.

The practicum may not be directly associated with distress. German student-teachers did not have a practicum, but 44% reported mental health issues (Zimmermann, Wangler, Unterbrink, Pfeifer, Wirsching, & Bauer, 2008). They, attributed their distress to role conflict, time commitments and a need for occupational mobility.

Australian student-teachers do engage in practice teaching in schools, and have reported stress associated with the practicum (Murray-Harvey, Silins, & Saebel, 1999).. Professional demands including time management, funding, technology, resources, student behaviour management, administrative and collegiate support, managing a crowded curriculum, examinations, demands of the profession and career development are understood (Facchinetti, 2010).

Impact of Psychological Distress

Psychological distress may be experienced as physical symptoms (Donaghy, 2004), or manifest as symptoms associated with anxiety, including impaired functioning, diminished

performance and lowered productivity (Chandavarkar, Azzam, & Mathews, 2007; Wong et al., 2006), suicidal ideation and increased mortality (Cuijpers, Smit, & van Straten, 2007) and depression (Garlow, Rosenberg, Moore, Haas, Koestner, Hendin, & Nemeroff, 2008). It is also a risk factor for absence and long-term illness (Flynn, 2000; Hickie, 2004; Kumar & Basu, 2000; Newbury-Birch et al, 2002; Pickard et al, 2000; Prince, 2007). In 2004-2005, 45% of Australian 20-24 year-olds were also found to drink at risky levels once or more a month (Wyn, 2009 p29). Thus, psychological distress, complicated by alcohol abuse in young adults, may potentially affect some student-teachers.

Even mild depression considerably impacts on well-being, and major depression is serious (Cuijpers et al., 2007). Physical symptoms associated with anxiety impact on the immune system (Prince, Patel, Saxena, Maj, Masek, & Phillips, 2007), and may include heartburn, chest pain, rashes and cardiovascular disease (Norton, Norton, Asmundson, Thompson, & Larsen, 1999). Depression symptoms may include excessive worry, loss of enjoyment, sleeping poorly or waking early and feeling slowed down (Christensen, Jorm, Mackinnon, Korten, Jacomb, Henderson, & Rodgers, 1999). Quality of life may be affected by feelings of hopelessness, and worry about mastery (Warmerdam, van Straten, & Cuijpers, 2007).

Student-teachers may be vulnerable to negative emotional experiences triggered by perceptions of self-doubt, or bullying. Chaplain (2008) reported that student-teachers optimism was dampened during their training, and they anticipated their levels of psychological distress would further increase when they began teaching. In that study, many student-teachers never commenced teaching. Others left very early in their careers, due to stress or mental health issues. Maguire (2001) found that young female student-teachers had been bullied to the extent that they had lost their confidence, and were considering leaving the profession. In this UK study, the female student-teachers were younger than 28 years. The bullies were either teacher(s) in the school where they were undertaking their practical experience, or their university tutor(s).

An Australian study across Primary Secondary schools in Queensland found an association between professional burnout, the impact of mastery, teaching workload, the requirement to learn new information and skills, technological innovations, and dealings with students, parents and the community (Pillay et al., 2005). The psychologically distressed teachers in that study saw themselves as less competent and their role as more demanding than other occupations. Among teachers, professional demands may contribute to diminished performance (Maslach, Schaufeli, & Leiter, 2001), absence due to long-term sickness (Bultmann et al., 2005) or attrition from the teaching profession (Pillay et al., 2005).

Dyson (2005) suggests that the purpose of teacher education is to prepare and develop teachers, and that this process is continual throughout a teacher's career. Physical complaints such as back pain, chest pain, shortness of breath, heart palpitations, problems with sleep or appetite, and fatigue are commonly used by the general population, rather than psychological complaints, when claiming inability to work (Donaghy, 2004). Alcohol abuse has also been linked to psychological distress, and may contribute to frequent absence without explanation, lateness, interpersonal conflicts and decreased performance (Baldisseri, 2007). The impact of psychological distress has potentially serious implications (Jorm, Griffiths, Christensen, & Medway, 2002) for the community, including teacher education. Thus, understanding psychological distress, and individual coping strategies, has the potential to contribute to teacher education.

Overview of Contemporary Stress Management and Coping Strategies

Coping strategies in the guidelines developed by the Australian and New Zealand College of Psychiatrists, also used among university students, include the therapeutic relationship, medication, and Cognitive Behaviour Therapy (CBT) (Ellis, 2004). However, whilst effective, these are not the only appropriate treatments (Parker & Fletcher, 2007). University students have engaged in self-help CBT programs offered via the Internet (Orbach, Lindsay, & Grey, 2007), and universities have provided mindfulness-based programs for stress reduction (Shapiro, Shapiro, & Schwartz, 2000). Exercise is effective and offers an additional social. However, university students may also use less adaptive coping strategies, such as wishful thinking, being resigned to adversity (Montgomery & Rupp, 2005), or turning to alcohol to cope with stress (Flynn, 2000).

Cognitive Behaviour Therapy (CBT), developed more than 40 years ago (Beck, 2005) for managing psychological distress, is based on recognising physical responses to thoughts, and changing cognitions, irrational thinking and maladaptive behaviours (Hazlett-Stevens & Craske, 2002; Vincelli, Choi, Molinari, Wiederhold, & Riva, 2000). For example, the thought “my heart is pounding, therefore I must be having a heart attack”, may be reframed, and the new thought could be “when my heart pounds it is a signal that I am feeling anxious”. Relaxation strategies are also taught in CBT (Kraus, Kunik, & Stanley, 2007).

GP's now also refer patients to self-help CBT websites (Usher, 2007; Valaitis, 2004). These are most effective when accompanied with supplementary telephone calls, and/or emails (Clarke, Eubanks, Reid, Kelleher, O'Connor, DeBar, Lynch, Nunley, & Gullion, 2005). The internet is used as a stress management tool. In one example, when UK university students were offered an internet-based CBT program prior to their exams, their test anxiety declined (Orbach et al., 2007). The program included CBT and progressive muscle relaxation modules. The anonymity of the internet is also popular among those who worry about the stigma of seeking professional help for their mental health (Barney, Griffiths, Jorm, & Christensen, 2006).

Mindfulness techniques and cognitive strategies have also been used together as self-help (Segal, Williams, & Teasdale, 2002), or mindfulness is used as a stand-alone coping strategy (Brown, Ryan, & Creswell, 2007). Aimed at creating greater insight (Shapiro, Schwartz, & Bonner, 1998), mindfulness requires cultivating awareness of the present moment. As measures of brain activity show reduced anxiety and a more positive mood following mindfulness meditation (Davidson, Kabat-Zinn, Schumacher, Rosenkranz, Muller, Santorelli, Urbanowski, Harrington, Bonus, & Sheridan, 2003) these strategies have become increasingly popular for mental health conditions (Brown et al., 2007; Limprecht, 2008).

Like mindfulness, relaxation reduced stress, the ruminative thinking of depression, and anxiety in healthy people (Chiesa & Serretti, 2009). An Australian program, consisting of relaxation and visualisation techniques, was provided to Early Childhood student-teachers prior to their second Practicum (Sumsion & Thomas, 1995). The results from this pilot study showed no significant difference quantitatively, but qualitative data from group discussions indicated that participating student-teachers perceived themselves to be more relaxed than their peers pre Practicum, and they were less stressed post Practicum than they had been at their first Practicum. Praise, support and recognition may ameliorate some psychological distress experienced by student-teachers in response to student misbehaviour, workload, inadequate facilities and other professional issues (Tuettemann & Punch, 1992).

Other positive coping strategies include exercise (Lawlor & Hopker, 2001) and social support (Chan, 2002). A health promotion program offered to all students at an American university (Werch, Bian, Moore, Ames, DiClemente, & Weiler, 2007) resulted in improvements in drink-driving, exercise, nutrition and sleep habits, and an increase in use of

stress management behaviours. Chan (2002) measured Chinese student-teachers' health concerns, sleep problems, anxiety, aspects of depression, and suicidal intention. He reported that 35% of student-teachers were psychologically distressed, but self-efficacy was a predictor for sleep problems and anxiety, and social support was a major coping strategy influencing distress in this group.

Student-teachers, teachers and others may also use negative coping strategies, including overuse of alcohol (Newbury-Birch, Lowry, & Kamali, 2002), withdrawal and avoidance. Risky alcohol use among psychologically distressed university students is not uncommon (Werch et al., 2007). Norwegian medical students' coping strategies, such as being problem-focussed, seeking social support, or focussing on emotions like wishful thinking were explored (Kjeldstadli, Tyssen, Finset, Hem, Gude, Gronvold, Ekeberg, & Vaglum, 2006). These students had lower levels of stress in conjunction with low levels of wishful thinking, when used as a coping mechanism.

Some university faculties have directed attention to the psychological well-being and pastoral care of students (Wong, Patil, Beh, Cheung, Wong, Chan, & Lieh Mak, 2005). Universities may provide stress management programs, and offer on-campus health services, but there is currently no "gold standard" for measuring the content of interventions to reduce psychological distress (Shapiro et al., 2000), therefore, the content of stress management programs may vary considerably. At the University of Arizona, medical students who participated in an 8-week meditation-based stress reduction intervention reduced their anxiety and overall psychological distress including depression, (Shapiro et al., 1998). These interventions consisted mainly of group meetings, held either between peers, or with leaders.

Another approach was a stress reduction elective, "Mind-Body Medicine", offered to students in Washington, USA (Finkelstein, Brownstein, Scott, & Lan, 2007). Results from this study indicated that the elective supported the development of participant's coping skills, and the techniques learnt had a lasting impact. Stress management programs, offered by universities to their medical students, have been associated with reduced levels of psychological distress (Redwood & Pollak, 2007). These strategies may be delivered by a health professional, as self-help, or as part of a university curriculum. A wellness elective, based on stress reduction techniques, was offered to medical students in Korea (Lee & Graham, 2001). The most frequently used coping strategies were talking to their peers, family and friends. They also suggested that the wellness training program was extremely helpful and it should be an essential aspect of the university curriculum.

An Australian study of student-teachers personal coping strategies found they used similar strategies. These included positive cognitions, physical activity, relaxation, humour, and time management (Murray-Harvey, Slee, Lawson, Silins, Banfield, & Russell, 2000). Professional coping strategies included knowing the curriculum, being organised, using breath and relaxation strategies, debriefing with family and friends, and seeking support from their supervising teacher(s), peers, and/or their university supervisor. A pilot study of an intervention provided to student-teachers prior to their practicum found that they were less stressed and anxious after that workshop and practicum, but there was no change in depression (Campbell & Uusimaki, 2006). These authors reported that both the qualitative and quantitative data illustrated that student-teachers did want this intervention, and it was helpful.

Conclusions

Whilst teaching is stressful, how a student-teacher copes may also be buffered by the ability to self-manage, particularly with so many changes, including technological

development in the profession (Dyson, 2005). The presence of adaptive coping resources, based on CBT, web-based self-help, mindfulness and social support may offer protection against stress. Some university faculties offer stress management programs, and schools promote mental health and wellbeing strategies for staff (Woodward, 2006). However, the extent of psychological distress and stress management strategies among student-teachers in the 21st century was less well known.

What is known is that the Practicum, during which student-teachers first engage in practise teaching in schools, may be stressful. Because stress is predictive of psychological distress in university students (Morrison & O'Connor, 2005), and there is a strong relationship between severity of depressive symptoms and suicidal ideation (Garlow et al., 2008), predictions regarding the reduction of psychological distress and coping would appear to warrant further investigation among student-teachers, who are also university students.

This literature review refers to the potential loss of productivity in the professions, including teaching when people, suffer from psychological distress. This also includes student-teachers for who the practicum may provide additional stress. Systematic programs, incorporating CBT and mindfulness, are known to significantly improve individual and workplace outcomes (Wang, Simon, Avorn, Azocar, Ludman, Petukhova, & Kessler, 2007). Australian undergraduate and postgraduate early childhood, primary and secondary school student-teachers' levels of anxiety, as measured by the Depression, Anxiety and Stress Scale (DASS) were reduced following the pilot of an intervention (Campbell & Uusimaki, 2006),

In order to prepare student-teachers to adequately prepare for potential stresses associated with the practice of teaching, this review outlines various interventions that promote psychological care and treatment. (Flay, Biglan, Boruch, Castro, Gottfredson, Kellam, Moscicki, Schinke, Valentine, & Ji, 2005). As significant numbers of student-teachers may be psychologically distressed, could benefit student-teachers in their real-world practicum experiences universities could consider the potential of developing preventative self-help and well-being programs for future student-teachers' wellbeing.

References

- ABS. (2006). National Health Survey shows mixed results [Electronic Version]. *Media Release, February 27, 2006; Embargoed: 11:30 AM (AEST); 18/2006*. Retrieved 6 January 2009, from <http://www.abs.gov.au/AUSSTATS/abs@.nsf//4364.0Main+Features12004-05?OpenDocument>
<http://www.abs.gov.au/ausstats/abs@.nsf//4824.0.55.001>
- Australian Bureau of Statistics. *Information paper: Use of the Kessler Psychological Distress Scale in ABS Health Surveys, Australia 2001*. Retrieved. from <http://www.abs.gov.au/AUSSTATS/abs@.nsf//B9ADE45ED60E0A1CCA256D2D0000A288?OpenDocument#2%20Alternative%20measures%20of%20mental>.
- Australian Bureau of Statistics. *National Survey of Mental Health and Wellbeing: Summary of Results. ABS Cat No. 4326.0. Canberra: ABS. (2007)*. Retrieved. from <http://www.health.gov.au/internet/mentalhealth/publishing.nsf//national-surveys-1>.
- Barney, L. J., Griffiths, K. M., Jorm, A. F., & Christensen, H. (2006). Stigma about depression and its impact on help-seeking intentions. *The Australian and New Zealand Journal of Psychiatry, 40*(1), 51-54.
- Beck, A. (2005). The current state of cognitive therapy: a 40-year retrospective. *Archives of General Psychiatry, 62*(9), 953-959.

- Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical Foundations and Evidence for its Salutary Effects. *Psychological Inquiry*, 18(4), 211–237.
- Bultmann, U., Huibers, M. J. H., Van Amelsvoort, L. P. G. M., Kant, U., Kasl, S. V., & Swaen, G. M. H. (2005). Psychological Distress, Fatigue and Long-Term Sickness Absence: Prospective Results From the Maastricht Cohort Study. *Journal of Occupational & Environmental Medicine*, 47(9), 941-947.
- Campbell, M. A., & Uusimaki, L. S. (2006). Teaching with confidence: A pilot study of an intervention challenging pre-service education students' field experience anxieties. *International Journal of Practical Experiences in Professional Education*, 9(1), 20-32.
- Chan, D. W. (2002). Stress, Self-Efficacy, Social Support, and Psychological Distress Among Prospective Chinese Teachers in Hong Kong. *Educational Psychology*, 22(5), 557 - 569.
- Chandavarkar, U., Azzam, A., & Mathews, C. A. (2007). Anxiety symptoms and perceived performance in medical students. *Depression and Anxiety*, 24(2), 103-111.
- Chaplain, R. P. (2008). Stress and Psychological Distress among Trainee Secondary Teachers in England. *Educational Psychology*, 28(2), 195-209
- Chiesa, A., & Serretti, A. (2009). Mindfulness-Based Stress Reduction for Stress Management in Healthy People: A Review and Meta-Analysis. *Journal of Alternative and Complementary Medicine*, 15(5), 593-600.
- Christensen, H., Jorm, A. F., Mackinnon, A. J., Korten, A. E., Jacomb, P. A., Henderson, A. S., et al. (1999). Age differences in depression and anxiety symptoms: a structural equation modelling analysis of data from a general population sample. *Psychological Medicine*, 29(2), 325-339.
- Clarke, G., Eubanks, D., Reid, E., Kelleher, C., O'Connor, E., DeBar, L. L., et al. (2005). Overcoming Depression on the Internet (ODIN) (2): a randomized trial of a self-help depression skills program with reminders. *Journal of Medical Internet Research*, 7(2), e16.
- Cuijpers, P., Smit, F., & van Straten, A. (2007). Psychological treatments of subthreshold depression: a meta-analytic review. *Acta Psychiatrica Scandinavica*, 115, 434-441.
- Dahlin, M., Joneborg, N., & Runeson, B. (2005). Stress and depression among medical students: a cross-sectional study. *Medical Education*, 39(6), 594-604.
- Dammeyer, M. M., & Nunez, N. (1999). Anxiety and depression among law students: current knowledge and future directions. *Law and Human Behavior*, 23(1), 55-73.
- Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., et al. (2003). Alterations in Brain and Immune Function Produced by Mindfulness Meditation. *Psychosomatic Medicine* 65, 564-570.
- Donaghy, M. (2004). Symptoms and the perception of disease. *Clinical Medicine (London, England)*, 4(6), 541-544.
- Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Academic Medicine*, 81(4), 354-373.
- Dyson, M. (2005). Australian Teacher Education: Although Reviewed To The Eyeballs Is There Evidence Of Significant Change And Where To Now? *Australian Journal of Teacher Education* 37, 30(1).
- Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *The American Journal of Orthopsychiatry*, 77(4), 534-542.
- Ellis, P. (2004). Australian and New Zealand clinical practice guidelines for the treatment of depression. *The Australian and New Zealand Journal of Psychiatry*, 38(6), 389-407.
- Facchinetti, A. (2010). Education revolution? *Education Today*, 10.
- Finkelstein, C., Brownstein, A., Scott, C., & Lan, Y.-L. (2007). Anxiety and stress reduction in medical education: an intervention. *Medical Education*, 41(3), 258-264.

- Flay, B. R., Biglan, A., Boruch, R. F., Castro, F. G., Gottfredson, D., Kellam, S., et al. (2005). Standards of evidence: criteria for efficacy, effectiveness and dissemination. *Prevention science*, 6(3), 151-175.
- Flynn, H. A. (2000). Comparison of cross-sectional and daily reports in studying the relationship between depression and use of alcohol in response to stress in college students. *Alcoholism: Clinical and Experimental Research* 24(1), 48-52.
- Garlow, S. J., Rosenberg, J., Moore, J. D., Haas, A. P., Koestner, B., Hendin, H., et al. (2008). Depression, desperation, and suicidal ideation in college students: results from the American Foundation for Suicide Prevention College Screening Project at Emory University. *Journal of Depression and Anxiety*, 25(6), 482-488.
- Griva, K., & Joeques, K. (2003). UK Teachers Under Stress: Can We Predict Wellness on the Basis of Characteristics of the Teaching Job? *Psychology & Health*, 18(4), 457-471.
- Guglielmi, R. S., & Tatrow, K. (1998). Occupational Stress, Burnout, and Health in Teachers: A Methodological and Theoretical Analysis. *Review of Educational Research*, 68(1), 61-99.
- Hakanen, J. J., Bakker, A. B., & Schaufeldi, W. B. (2006). Burout and work engagement among teachers. *Journal of School Psychology*, 43, 495-513.
- Hazlett-Stevens, H., & Craske, M. (2002). *Handbook of Brief Cognitive Behaviour Therapy*. California: John Wiley & Sons.
- Hirschfeld, R. M. A. (2001). The Comorbidity of Major Depression and Anxiety Disorders: Recognition and Management in Primary Care. *The Primary Care Companion to the Journal of Clinical Psychiatry* 3(6), 244-254.
- Humphris, G., Blinkhorn, A., Freeman, R., Gorter, R., Hoad-Reddick, G., Murtomaa, H., et al. (2002). Psychological stress in undergraduate dental students: baseline results from seven European dental schools. *European Journal of Dental Education*, 6(1), 22-29.
- Jorm, A. F., Christensen, H., & Griffiths, K. M. (2006). Changes in depression awareness and attitudes in Australia: the impact of beyondblue: the national depression initiative. *The Australian and New Zealand Journal of Psychiatry*, 40(1), 42-46.
- Jorm, A. F., Griffiths, K. M., Christensen, H., & Medway, J. (2002). Research priorities in mental health, part 1: an evaluation of the current research effort against the criteria of disease burden and health system costs. *Australian and New Zealand Journal of Psychiatry*, 36(3), 322-326.
- Kjeldstadli, K., Tyssen, R., Finset, A., Hem, E., Gude, T., Gronvold, N. T., et al. (2006). Life satisfaction and resilience in medical school--a six-year longitudinal, nationwide and comparative study. *BMC Medical Education*, 6, 48.
- Kraus, C. A., Kunik, M. E., & Stanley, M. A. (2007). Use of cognitive behavioral therapy in late-life psychiatric disorders. *Geriatrics*, 62(6), 21-26.
- Lawlor, D. A., & Hopker, S. W. (2001). The effectiveness of exercise as an intervention in the management of depression: systematic review and meta-regression analysis of randomised controlled trials. *British Medical Journal*, 322(7289), 763-767.
- Lee, J., & Graham, A. V. (2001). Students' perception of medical school stress and their evaluation of a wellness elective. *Medical Education*, 35(7), 652-659.
- Limprecht, E. (2008, December 13-14). Meditation no cure, but it helps. *Weekend Australian*, Montgomery, C., & Rupp, A. A. (2005). A Meta-analysis for Exploring the Diverse Causes and Effects of Stress in Teachers. *Canadian Journal of Education*, 28(3), 458-486.
- Morrison, R., & O'Connor, R. C. (2005). Predicting Psychological Distress in College Students: The Role of Rumination and Stress. *Journal of Clinical Psychology*, 61(4), 447-460.
- Murray-Harvey, R., Silins, H., & Saebel, J. (1999). A Cross-Cultural Comparison of Student Concerns in the Teaching Practicum *International Education Journal* 11(1).

- Murray-Harvey, R., Slee, P., Lawson, M., Silins, H., Banfield, G., & Russell, A. (2000). Under Stress: the concerns and coping strategies of teacher education students. *European Journal of Teacher Education*, 23(1), 19-35.
- Murray, C. J. L., & Lopez, A. D. (1997). Alternative projections of mortality and disability by cause. 1990–2020: Global Burden of Disease Study. *The Lancet*, 349 (May 24), 1498–1504.
- Newbury-Birch, D., Lowry, R. J., & Kamali, F. (2002). The changing patterns of drinking, illicit drug use, stress, anxiety and depression in dental students in a UK dental school: a longitudinal study. *British Dental Journal*, 192(11), 646-649.
- Norton, G. R., Norton, P. J., Asmundson, G. J., Thompson, L. A., & Larsen, D. K. (1999). Neurotic butterflies in my stomach: the role of anxiety, anxiety sensitivity and depression in functional gastrointestinal disorders. *Journal of Psychosomatic Research*, 47(3), 233-240.
- Orbach, G., Lindsay, S., & Grey, S. (2007). A randomised placebo-controlled trial of a self-help Internet-based intervention for test anxiety. *Behaviour research and therapy*, 45(3), 483-496.
- Parker, G., & Fletcher, K. (2007). Treating depression with the evidence-based psychotherapies: a critique of the evidence. *Acta Psychiatrica Scandinavica*, 115(5), 352-359.
- Pillay, H. K., Goddard, R., & Wilss, L. A. (2005). Well-being, burnout and competence: Implications for teachers. *Australian Journal of Teacher Education* 30(2), 22-33.
- Prince, M., Patel, V., Saxena, S., Maj, M., Maselkp, J., & Phillips, M. R. (2007). Global Mental Health 1: No health without mental health. *The Lancet*, 370, 859-877.
- Pritchard, M. E., Wilson, G., S., & Yamnitz, B. (2007). What Predicts Adjustment Among College Students? A Longitudinal Panel Study *Journal of American College Health*, 56(1), 15-21.
- Redwood, S. K., & Pollak, M. H. (2007). Student-led stress management program for first-year medical students. *Teaching and Learning in Medicine*, 19(1), 42-46.
- Ridner, S. H. (2004). Psychological distress: concept analysis. *Journal of Advanced Nursing*, 45(5), 536 - 545.
- Schonfeld, I. S. (1992). A longitudinal study of occupational stressors and depressive symptoms in first-year female teachers. *Teaching & Teacher Education*, 8(2), 151-158.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.
- Selye, H. (1982). The Nature of Stress. *The Best of Basal Facts -1976-1987*, from www.icnr.com/articles/thenatureofstress.html - 41k
- Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of Behavioral Medicine*, 21(6), 581-599.
- Shapiro, S. L., Shapiro, D. E., & Schwartz, G. E. (2000). Stress management in medical education: a review of the literature. *Academic Medicine*, 75(7), 748-759.
- Sherina, M. S., Rampal, L., & Kaneson, N. (2004). Psychological stress among undergraduate medical students. *The Medical Journal of Malaysia*, 59(2), 207-211.
- Stallman, H. M. (2008). Prevalence of psychological distress in university students: Implications for service delivery. *Australian Family Physician*, 37(8), 673-677.
- Sumsion, J., & Thomas, D. (1995). *Stress management for student teachers in the practicum* Paper presented at the Annual Conference of the Australian Association for Research in Education, Hobart
- Tuettemann, E., & Punch, K. F. (1992). Psychological distress in secondary teachers: Research findings and their implications. *Journal of Educational Administration*, 30(1), 13.

- Vincelli, F., Choi, Y., Molinari, E., Wiederhold, B., & Riva, G. (2000). Experiential Cognitive Therapy for the Treatment of Panic Disorders with Agoraphobia: Definition of a clinical protocol. *CyberPsychology and Behaviour*, 3(3), 375-386.
- Vitaliano, P. P., Maiuro, R. D., Russo, J., & Mitchell, E. S. (1989). Medical student distress. A longitudinal study. *The Journal of Nervous and Mental Disease*, 177(2), 70-76.
- Wang, P., S, Simon, G., E, Avorn, J., Azocar, F., Ludman, E., J, Petukhova, M., Z, et al. (2007). Telephone Screening, Outreach, and Care Management for Depressed Workers and Impact on Clinical and Work Productivity Outcomes. *Journal of the American Medical Association*, 298(12), 1401-1411.
- Warmerdam, L., van Straten, A., & Cuijpers, P. (2007). Internet-based treatment for adults with depressive symptoms: the protocol of a randomized controlled trial. *BMC Psychiatry*, 7, 72.
- Werch, C., Bian, H., Moore, M., Ames, S., DiClemente, C., & Weiler, R. (2007). Brief Multiple Behaviour Interventions in a College Student Health Care Clinic. *Journal of Adolescent Health*, 41(6), 577-585.
- Wong, J. G., Patil, N. G., Beh, S. L., Cheung, E. P., Wong, V., Chan, L. C., et al. (2005). Cultivating psychological well-being in Hong Kong's future doctors. *Medical Teacher*, 27(8), 715-719.
- Wong, J. G. W. S., Cheung, E. P. T., Chan, K. K. C., Ma, K. K. M., & Tang, S. W. (2006). Web-based survey of depression, anxiety and stress in first-year tertiary education students in Hong Kong. *Australian and New Zealand Journal of Psychiatry*, 40(9), 777-782.
- Woodward, P. (2006). Putting staff wellbeing higher on the agenda. *Independent Education*, 36(3), 20-21.
- Zimmermann, L., Wangler, J., Unterbrink, T., Pfeifer, R., Wirsching, M., & Bauer, J. (2008). *Mental Health in a Sample of German Teachers at the Beginning of their Occupational Career*. Paper presented at the XXIX International Congress of Psychology. from <http://1.icp2008.org/guest/AbstractView?ABSID=8487>
- Zimmermann, L., Wangler, J., Unterbrink, T., Pfeifer, R., Wirsching, M., & Bauer, J. (Eds.). (2008). *Mental Health in a Sample of German Teachers at the beginning of their Occupational Career*. Berlin.