

# Impostor syndrome and compassion fatigue among graduate allied health students: A pilot study

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## Abstract

**Aim:** This study explored the prevalence of compassion fatigue and impostor syndrome risk in Australian university students in two allied health disciplines.

**Methods:** In July 2018, anonymous surveys were collected from 72 graduate allied health students (76.4% female, 50% aged under 25 years old). The Professional Quality of Life (ProQOL) scale was used to measure compassion fatigue, with participant scores categorised into “not at risk”, “low to average risk” or “high risk” using the cut-offs outlined in the ProQOL manual. The Young Impostor Scale (YIS) was used to screen for the presence of impostor syndrome.

**Results:** More than a third of respondents (37.5%) had symptoms of impostor syndrome, and 15.3% were at risk for compassion fatigue. Presence of compassion fatigue and/or impostor syndrome was analysed across age range, gender, living arrangement and student status (domestic or international), revealing females were more likely to screen positive for impostor syndrome (45.5%) than males (11.8%). Results from the ProQOL and YIS were combined to identify 57% of participants to be at risk of one or both of these potentially detrimental states.

**Conclusion:** The results of this study suggest the importance of prioritising impostor syndrome and compassion fatigue in future student mental health research. Specifically, attention should include a critical evaluation of the assessment measures and approaches available. Longitudinal monitoring of impostor syndrome and its interplay with other conditions, such as compassion fatigue, across allied health professions would be valuable in developing a theoretical framework to support interventional studies.

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**Keywords:** burnout; secondary traumatic stress; professional education; mental health

## Introduction

Higher levels of psychological distress have been identified in university students compared to the general population (Cvetkovski et al., 2012; Stallman, 2010). Recent investigations into the mental health of Australian university students revealed an estimated 210,000 young people experiencing mental ill-health in a given year (Orygen: The National Centre of Excellence in Youth Mental Health, 2017), with students from different disciplines, including law, psychology, mechanical engineering and healthcare, affected (Leahy et al., 2010). The report cites a number of risk factors for distress in students: the “in the moment aspects” of academic and financial pressures while studying; the “getting there” stress generated by transitioning to higher education and relocating away from home; and broader wellbeing issues, such as diet, inappropriate drug use and poor sleep. The report calls for urgent research into the risk factors and their impacts on the development and maintenance of psychological distress, designating universities as well-positioned to lead these investigations (Orygen: The National Centre of Excellence in Youth Mental Health, 2017).

One determinant of psychological distress in allied health students that deserves further exploration is the impact of caring for clients in difficult or distressing circumstances, for example, learning how to impart unexpected information to a client about changes in their function, activities and lifestyle (Sexton, 2013). Most studies looking at the impact of challenging conversations on healthcare trainees have focused on nursing and medicine disciplines, with a lack of research in the allied health disciplines (Sorenson et al., 2016). The distinction between health and allied health is important, as often the allied health communication role differs from that of the medical professional, with more focus on the practical, long-term issues of adjustment to living with a disability (Sexton, 2013). Allied health students are required to use a family-centred approach that fosters collaboration with the client in planning and implementing medium- to long-term management strategies. In doing so, they learn techniques such as informational counselling (calmly and effectively outlining diagnoses, management options and outcomes) and personal-adjustment counselling (dealing with the psychosocial impact of receiving bad news and having to make sometimes drastic and prolonged changes in lifestyle). Consequently, allied health students are frequently exposed to and involved in “repeated interactions requiring high levels of empathic engagement with distressed clients” (Sorenson et al., 2016, p. 456). The ability to engage with upset clients and their families is integral to the professional education of the two allied health disciplines investigated in the current study, occupational therapy and audiology, and dealing with clients exhibiting strong emotion may be costly to the emotional wellbeing of these student clinicians (Sexton, 2013). Students may develop unhelpful coping strategies, such as emotional withdrawal (Lefebvre & Levert, 2006) and depersonalisation (Legassie et al., 2008), negatively impacting their sense of achievement and progress (Vandekieft, 2001). This, in turn, impacts the client’s experience of the competence of the clinician and the value of the particular rehabilitation.

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Interactions with clients can lead to a distinctive manifestation of psychological distress termed compassion fatigue (Joinson, 1992). Compassion fatigue may be described as a negative experience whereby exposure to the suffering of others over time gradually lessens the individual's level of compassion (Mathieu, 2007). The professional may become numb to others' distress and disconnected from the reasons they selected their profession in the first place (Figley, 1995). Sorenson et al. (2016) linked the occurrence of compassion fatigue to the intensity and nature of the patient-provider interaction. They found those who dealt with the traumatised patient or with family conflicts showed a higher incidence of compassion fatigue, as did those who were responsible for delivering news of a negative or ambiguous nature. When a student clinician becomes worn down to the point where they lose compassion, they are likely to be suffering from compassion fatigue (Joinson, 1992).

The construct "compassion fatigue" is an umbrella term that exists as a combination of two sub-conditions, burnout and secondary traumatic stress (Stamm, 2010). Burnout is the more gradual component that stems from being overworked and under-supported in the learning environment (El-bar et al., 2013), while secondary traumatic stress appears more abruptly from exposure to the trauma of patients in the clinician's care (El-bar et al., 2013). Unfortunately, the terminology and concepts are interwoven throughout the research literature to the degree where differentiation becomes ambiguous and complex.

International findings across student populations reveal that compassion fatigue is common in students. Thirty percent of Australian veterinary students were at high risk for burnout and 24% for secondary traumatic stress (McArthur et al., 2017). In excess of half of student nurses surveyed in a South African study were at high risk of burnout (51.25%) and secondary traumatic stress (60%) (Mason & Nel, 2012). American internal medicine residents reportedly experienced burnout in 12.5% of participants (Legassie et al., 2008), while compassion fatigue was reported in midwifery students after exposure to a traumatic birthing experience (McKenna & Rolls, 2011).

If compassion fatigue is related to "in the moment learning", psychological distress may further be impacted by larger "getting there" considerations. One example of a phenomenon that directly speaks to, and detrimentally impacts, settling into higher education is called imposter syndrome. Imposter syndrome (also termed imposter phenomenon or imposterism) describes an internal experience of phoniness by individuals who outwardly and objectively appear successful to others (Aubeeluck et al., 2016; Clance & Imes, 1978). These individuals attribute their success to luck instead of personal ability or achievement, even when confronted with objective proof of their competence. The consequence is a life lived in constant fear of having their incompetence exposed (Rakestraw, 2017).

In its more detrimental forms, imposter syndrome has been linked with generalised anxiety, low self-esteem, depression and isolation. Prevalent across occupations (e.g., librarians, lawyers, nurses and medical practitioners), nearly 70% of individuals will experience imposter syndrome at least once in their working life (Sakulku & Alexander, 2011).

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Imposter syndrome is often benignly associated with transitions to a new role or life stage that brings about a new identity and relational paradigm, such as transitioning into higher education or moving from undergraduate to graduate education (Clance & Imes, 1978; Oriel et al., 2004). The higher education context may be considered fertile ground for the development of benign, transient imposter syndrome or more harmful manifestations of the phenomenon. Indeed, it has been documented in undergraduate students (Gardner & Holley, 2011; Willans & Seary, 2011), including in Australian student nurses, where 38.5% were classified as experiencing imposter syndrome symptoms (Christensen et al., 2016), in American family medicine residents, where one third reported symptoms that were correlated with anxiety and depression (Oriel et al., 2004) and in American internal medicine residents, where just under half (43.8%) reported symptoms, with foreign trained physicians more likely to report positive for imposter syndrome (Legassie, et al., 2008).

Research in the university context has mostly focused on undergraduate students (Gardner & Holly, 2011), despite a common admission pathway to the healthcare and allied health professions being via graduate programs. The distinction between undergraduate and graduate entry may be an important one, as students in graduate programs are older and have already obtained a degree; their course work is fast-tracked; they are in clinical placement situations earlier; and they are expected to demonstrate competency in a shorter time frame and display a level of maturity when faced with challenges that may not be expected of undergraduate students. There may not be as much attention given to graduate students or awareness of the persistence of harmful manifestations of imposter syndrome as students are assumed to be familiar and comfortable with the higher education environment. The ability to accurately assess one's own abilities is an important outcome of graduate education, and a perceived sense of fraudulence is likely to negatively impact on accelerated knowledge acquisition. Arguably, graduate allied health students could become at risk of developing imposter syndrome in these circumstances.

The aim of this pilot study was to investigate the prevalence of compassion fatigue and imposter syndrome risk in a cohort of Australian allied health graduate students. Further, the relationships between compassion fatigue and imposter syndrome were investigated, with one focus being to determine whether any demographic variables were related with either phenomena. To the authors' knowledge, compassion fatigue and imposter syndrome have not been considered in graduate allied health students to date.

## Methods

### *Design*

In July 2018, a cross-sectional survey design was selected to determine the prevalence of compassion fatigue and imposter syndrome and to explore their relationship with demographic characteristics. This study was approved by the University of Queensland's Human Ethics Research Committee (2018000920).

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***Participants***

Criterion sampling was used to select participants currently enrolled in a graduate allied health discipline in the School of Health and Rehabilitation Sciences who:

- a) were present on campus during the period of data collection
- b) had already completed at least one clinical placement as part of their course work.

Ninety-seven students from the disciplines of occupational therapy and audiology were invited to participate in the study. These disciplines were a convenience sample available to the researchers at the time of the study.

***Measures***

The survey consisted of a demographic questionnaire, the Professional Quality of Life Scale version 5 (ProQOL) (Stamm, 2010), and the Young Impostor Scale (YIS) (Villwock et al., 2016). The demographic questionnaire included five items that were selected as relevant from peer-reviewed literature: age (in ranges), gender, student status (international or domestic), living arrangement and length of current living arrangement.

Compassion fatigue was measured using the ProQOL, which has 30 items across three subscales measuring compassion satisfaction, burnout and secondary traumatic stress. Participants ranked 30 statements by frequency over the previous 30 days on a 5-point Likert scale (1 = *never* to 5 = *very often*).

The Young Impostor Scale (YIS) (Villwock et al., 2016) was used to screen participants for symptoms of impostor syndrome. This is an 8-item scale, with participants responding “yes” or “no” to statements of impostor-like experiences.

***Procedure***

The researchers distributed the questionnaires during lectures with students in the relevant cohorts. Students were introduced to the study and invited to participate. A lay summary of the project and paper copies of the survey were distributed to all lecture attendees. Those wishing to participate were given 15 minutes at the end of their lecture to complete the survey or the option to take the survey with them to return to the research team at a later time. Researchers were not present in the room while the surveys were completed. Participants were prompted to consider their clinical placement experiences when responding to the survey items.

***Data analysis***

ProQOL scores were totalled for each subscale after reverse coding, as outlined in the ProQOL manual (Stamm, 2010). Scores were then converted into *t*-scores and cut-offs applied to categorise the risk level as “low”, “average” or “high” across the three subscales, as previously described by Stamm (2010). The burnout and secondary traumatic stress subscales were combined to form an aggregate score for compassion fatigue and coded as a dummy variable, with high scores for both scales representing high risk for compassion fatigue (Stamm, 2010).

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Results from the YIS were totalled, giving a score out of eight. Five or more “yes” responses were considered a positive result for impostor syndrome (Villwock et al., 2016). A dummy variable for presence of impostor syndrome was created and coded as 0 = *no*, 1 = *yes*.

Analyses were conducted with the Statistical Package for the Social Sciences, version 25. All data were adequately homoscedastic and linear except for the YIS scale, which had a significant Shapiro-Wilk test, indicating a departure from normality and the necessity for non-parametric methods. All scales were tested for internal consistency within the sample. Results were good for the compassion satisfaction scale ( $\alpha = .84$ ), acceptable for the secondary traumatic stress scale ( $\alpha = .75$ ) and poor for the burnout scale ( $\alpha = .59$ ). These scores are lower than reported in the literature—compassion satisfaction ( $\alpha = .88$ , secondary traumatic stress ( $\alpha = .81$ ), burnout ( $\alpha = .75$ ) (Stamm, 2010). The YIS also had poor internal consistency ( $\alpha = .59$ ). Given the exploratory nature of this pilot study, these measures were considered appropriate for preliminary exploration of these outcomes.

Descriptive analysis was conducted to investigate the prevalence of all the outcome variables using frequency tables. Associations between the ProQOL, YIS and demographic variables were explored using chi square analyses and two-sided Fisher’s exact test. Bivariate correlations further investigated the relationship between the outcome variables as *t*-scores and the predictor variables.

## Results

### *Participant demographics*

A total of 72 completed surveys were returned, resulting in a response rate of 74%. The demographic characteristics of this sample are detailed in Table 1. The proportion of international students in the sample (23.6%) is comparative to that in the population of allied health students in Australia, which is 26% (Department of Education and Training, 2016). Male students appeared to be under-represented in this sample, accounting for two in 10 compared to four in 10 in the general student population (Department of Education and Training, 2018); however, compared to allied health specific data, this sample had a higher male representation than the estimated one in 10 in the occupational therapy discipline (Australian Institute of Health and Welfare, 2013). This suggests that the sample’s gender asymmetry is a characteristic of the occupational group.

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**Table 1***Demographic Data of Participants (n = 72)*

Variable		Participants n (%)
Age	< 25	36 (50)
	25–29	23 (31.9)
	30–35	8 (11.1)
	36–40	3 (4.2)
	41–45	1 (1.4)
	46–50	1 (1.4)
Female		55 (76.4)
Living arrangement	University dormitory	1 (1.4)
	Alone	8 (11.1)
	Share house	23 (31.9)
	Partnered	25 (34.7)
	Parents	15 (20.8)
Length of living arrangement	< 1 year	26 (36.1)
	1–2 years	14 (19.4)
	2–5 years	13 (18.1)
	> 5 years	19 (26.4)
Domestic		55 (76.4)

***Relationships between demographic variables, the ProQOL and the YIS***

Results revealed a significant positive relationship between gender and the YIS, with those participants identifying as female significantly more likely to score positive for imposter syndrome—45.5% in females versus 11.8% in males ( $p = 0.02$ ). There were no significant relationships between demographic variables and the ProQOL.

***Prevalence of burnout, compassion satisfaction, secondary traumatic stress and imposter syndrome***

The proportion of participants across the three risk levels on the ProQOL subscales are presented in Table 2. Most participants fell within the average risk level category, with proportionally similar numbers in the low- and high-risk categories. In terms of imposter syndrome, 45 participants were not at risk (62.5%) compared with those who had a positive risk ( $n = 27$ , or 37.5%).

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**Table 2**  
*Prevalence of Compassion Satisfaction, Burnout and Secondary Traumatic Stress*

Variable	Low	Average	High
Compassion satisfaction	17 (23.6%)	39 (54.2%)	16 (22.3%)
Burnout	18 (25%)	32 (44.4%)	22 (30.6%)
Secondary traumatic stress	19 (26.4%)	33 (45.8%)	20 (27.8%)

Risk categories that combine the ProQOL subscale scores into “no risk”, “low to average risk” and “at risk” are displayed in Table 3. The “at risk” category contained 43.1% of participants. Those with high levels of burnout or secondary traumatic stress in isolation made up the other two thirds (15.3% and 9.7%, respectively). Those who self-reported both burnout and secondary traumatic stress formed 12.5% of the sample. Most of the cohort (40.3%) reported only low to average levels of burnout and secondary traumatic stress, with 16.7% of participants showing ideal scores (high compassion satisfaction, low burnout and secondary traumatic stress).

**Table 3**  
*Risk Categories Based on ProQOL Results*

Risk Level	ProQOL Results	Percentage	Total
Not at risk	High CS with low to average BO & STS	16.7%	16.7%
Low to average risk	Low to average CS, BO & STS	40.3%	40.3%
At risk	High BO with low to average CS & STS	15.3%	43.1%
	High STS with low to average BO & CS	9.7%	
	High STS & CS with low to average BO	2.8%	
	High STS & BO with low to average CS	12.5%	
	High STS, BO & CS	2.8%	

Note: CS = compassion satisfaction; BO = burnout; STS = secondary traumatic stress

Table 4 combines the prevalence of risk from the ProQOL and the YIS. The darker the shaded cell, the higher risk—with the highest risk being for those who scored high on the ProQOL (with imposter syndrome) followed by those who are high on the ProQOL (without imposter syndrome) or imposter syndrome with low to average ProQOL. Combined, the three categories represent 57% of participants.



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**Table 4***ProQOL and YIS Combined Prevalence*

ProQOL risk level	With imposter syndrome n = 27 (37.5%)	Without imposter syndrome n = 45 (62.5%)
High (n = 30)	18.1%	25%
Low to average (n = 30)	13.9%	26.4%
Not at risk (n = 12)	5.6%	11%

***Relationships between the ProQOL and the YIS***

Bivariate correlations revealed a weak, positive correlation between secondary traumatic stress and burnout ( $r = .405$   $n = 72$ ,  $p < .001$ ) (95% confidence interval,  $p = .192$  and  $p = .582$ ) and a moderate strength, negative correlation between compassion satisfaction and burnout ( $r = -.464$   $n = 72$ ,  $p < .001$ ) (95% confidence interval,  $p = -.261$  and  $p = -.628$ ). There was no significant relationship between secondary traumatic stress and compassion satisfaction or between the presence of imposter syndrome and burnout, compassion satisfaction or secondary traumatic stress.

**Discussion**

The pilot study captured a snapshot of the presence and degree of two mental health phenomena in a cohort of 72 graduate allied health students from the disciplines of audiology and occupational therapy. The ProQOL was used to measure both the personal cost and satisfaction created by caring for others as a student clinician. These factors represent fundamental and critical considerations when working with clients with health conditions. The YIS was used to screen for presence of imposter syndrome and probe students' level of perceived phoniness, which is embedded in the broader construct of belonging and feelings of legitimacy. The relationships between these outcomes and specific demographic characteristics that were considered risk factors or linked to the phenomena in the literature were also explored.

The prevalence of imposter syndrome (37.5%) in the current study appears consistent with national and international trends in student populations, for example, in Australian nursing students (38.5%; Christensen et al., 2016) and Canadian medical residents (43.8%; Legassie et al., 2008). The prevalence seems to be within this range regardless of when a measure of imposter syndrome is administered. For example, our assessment occurred midway through the cohorts' graduate studies (end of the second semester of a 4-semester course) or near the end of their studies (final semester of a 4-semester course), while the nursing students were in their final year (Christensen et al., 2016), and the medical residents were assessed during their first 3 years of postgraduate residency (Legassie et al., 2008).

Legassie and colleagues (2008) also identified the stable nature of imposter syndrome across their cohort of senior and junior medical residents. Similarly, Oriel et al. (2004) reported no associations between imposter syndrome and year of study. Legassie et

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al. (2008) reported an increased presence of burnout with an increase in seniority. Whether imposter syndrome increased the risk for burnout in these medical residents is speculative but intriguing. Imposter syndrome is exacerbated by new challenges (Clance & Imes, 1978) and shifting roles (Oriel et al., 2004). The increased number of clinical placements with higher requirements for independent thinking and complex problem solving may perpetuate imposter syndrome. Since the defining characteristic of imposter syndrome is self-doubt with resistance to objective (positive) feedback, even efforts to alleviate imposter syndrome-related stress through monitoring, evaluation and achievement may be ineffective. Indeed, it may paradoxically perpetuate its harmful presentation. This sentiment is echoed by Villwock et al. (2016), who speculated that imposter syndrome appears to be a static trait that cannot be “trained out” of high achieving students.

The investigation of imposter syndrome in relation to compassion fatigue is an urgent consideration due to the potential perpetuating nature of both conditions. According to Robinson-Walker (2011), the effects of imposter syndrome may be seen in increased moodiness and performance anxiety. Performance anxiety may, in turn, challenge students to increase their productivity, which may lead to study preparation being prioritised over rest, relaxation, socialisation and other aspects of wellbeing. Students who habitually overwork may create unrealistic expectations of achievement that will, in the presence of imposter syndrome and despite measurable successes, be exacerbated. Students whose clinical placements may require interpersonal engagement, such as the cohort under investigation, may be more vulnerable to the development of burnout, compassion fatigue and stress-related mental health concerns. Regardless of the presence of imposter syndrome risk, the exposure to clinical placement experiences without appropriate psychological preparation and monitoring may force students to employ maladaptive coping mechanisms when under immediate stress, some of which may be unhealthy in the long term (Asfour & Ramadan, 2011; Figley, 1995; McArthur et al., 2017).

The ability to help others, also termed compassion satisfaction, is situated at the core of many health and allied health professions. It may act preventatively against the development of burnout (McArthur et al., 2017). In the current study, a significant negative correlation was revealed between compassion satisfaction and burnout ( $r = -.464$ ). Almost a quarter of students showed low levels of compassion satisfaction (23.5%), similar to Australian veterinary students (21%; McArthur et al., 2017), potentially removing the protective shield against burnout and compassion fatigue in students.

When examining the two detrimental components of the ProQOL, nearly one third of the participants in the current study were negatively impacted—30.6% by burnout and 27.8% by secondary traumatic stress. Our findings approximated the median of both national and international studies—12.5 to 51.3% for burnout (Legassie et al., 2008; Mason & Nel, 2012; McArthur et al., 2017) and 24 to 60% for secondary traumatic stress (Mason & Nel, 2012; McArthur, et al., 2017), although the large ranges render the comparison less useful.

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According to the Orygen report, one in four students suffer from mental ill-health in a given year (Orygen: The National Centre of Excellence in Youth Mental Health, 2017). Whether the ProQOL and YIS results from the current study represent risk of developing or manifestation of already established poor mental health, a call to immediate action becomes apparent. One in two students are at risk of distress based on the ProQOL results alone (43.1%). With the addition of YIS findings, the risk percentage increased to 57%. The exploration of imposter syndrome as a causal or exacerbating factor for at-risk students is a priority. If feelings of phoniness persist without attention, any efforts to address compassion fatigue and burnout, or efforts to enhance compassion satisfaction, may be rendered ineffective.

This pilot study was limited by its cross-sectional design, precluding exploration of causality. To the authors' knowledge, no longitudinal data are available in the literature on this topic. It is important to note that the YIS is not a validated measure and may have overestimated the presence of imposter syndrome in this sample. However, removing the YIS results from the analysis, the ProQOL results alone still present 43.1% of the sample at high risk of psychological distress. The 20-item Clance Imposter Phenomenon Scale (Clance, 1985) has shown good reliability and sensitivity to imposter syndrome (Holmes et al., 1993) and may be a suitable alternative for future studies, despite concerns regarding the theoretical model and factor structures used (French et al., 2008).

Future research encompassing participants from a broader range of allied health disciplines, such as physiotherapy and speech pathology, would be a valuable contribution to the literature and provide opportunity for comparison across these related disciplines, which share similar course requirements (placements, simulated practice) and work practices (client counselling, caring professions.)

## Conclusion

To the authors' knowledge, this was the first study to investigate compassion fatigue and imposter syndrome in allied health students. While preliminary, our findings suggest more than one in two students are at risk for these detrimental states. Findings justify further exploration and research. Specifically, attention should include a critical evaluation of the assessment measures and approaches available. Longitudinal monitoring of imposter syndrome and its interplay with other conditions, such as compassion fatigue, across allied health professions would be valuable in developing a theoretical framework to support interventional studies.

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**References**

- Asfour, H., & Ramadan, F. H. (2011). Posttraumatic stress among undergraduate emergency nursing students. *Journal of American Science*, 7(6), 997–1004. [http://www.jofamericanscience.org/journals/am-sci/am0706/155\\_6069am0706\\_997\\_1004.pdf](http://www.jofamericanscience.org/journals/am-sci/am0706/155_6069am0706_997_1004.pdf)
- Aubeeluck, A., Stacey, G., & Stuppel, E. J. (2016). Do graduate entry nursing students experience “imposter phenomenon”? An issue for debate. *Nurse Education in Practice*, 19, 104–106. <https://doi.org/10.1016/j.nepr.2016.06.003>
- Australian Institute of Health and Welfare. (2013). *Allied health workforce 2012* (Cat. no. HWL 51). AIHW. <https://www.aihw.gov.au/getmedia/ceeac63a-1670-4e75-85d2-61225ffb4ca9/15993.pdf.aspx?inline=true>
- Christensen, M., Aubeeluck, A., Fergusson, D., Craft, J., Knight, J., Wirihana, L., & Stuppel, E. (2016). Do student nurses experience imposter phenomenon? An international comparison of final year undergraduate nursing students’ readiness for registration. *Journal of Advanced Nursing*, 72(11), 2784–2793. <https://doi.org/10.1111/jan.13034>
- Clance, P. R. (1985). *The imposter phenomenon: Overcoming the fear that haunts your success*. [https://openlibrary.org/books/OL2554807M/The\\_impostor\\_phenomenon](https://openlibrary.org/books/OL2554807M/The_impostor_phenomenon)
- Clance, P. R., & Imes, S. A. (1978). The imposter phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research & Practice*, 15(3), 241–247. <https://doi.org/10.1037/h0086006>
- Cvetkovski, S., Reavley, N. J., & Jorm, A. F. (2012). The prevalence and correlates of psychological distress in Australian tertiary students compared to their community peers. *Australian & New Zealand Journal of Psychiatry*, 46(5), 457–467. <https://doi.org/10.1177/0004867411435290>
- Department of Education and Training. (2016). *2015 higher education statistics* [Infographic]. [https://docs.education.gov.au/system/files/doc/other/2015\\_infographic\\_0.pdf](https://docs.education.gov.au/system/files/doc/other/2015_infographic_0.pdf)
- Department of Education and Training. (2018). *2017 First half year higher education statistics* [Infographic]. <https://docs.education.gov.au/system/files/doc/other/2017firsthalfyearstudentinfographic.pdf>
- El-bar, N., Levy, A., Wald, H. S., & Biderman, A. (2013). Compassion fatigue, burnout and compassion satisfaction among family physicians in the Negev area: A cross-sectional study. *Israel Journal of Health Policy Research*, 2(1), Article 31. <https://doi.org/10.1186/2045-4015-2-31>
- Figley, C. R. (Ed.). (1995). *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. Brunner/Mazel.
- French, B. F., Ullrich-French, S. C., & Follman, D. (2008). The psychometric properties of the Clance Impostor Scale. *Personality and Individual Differences*, 44(5), 1270–1278. <https://doi.org/10.1016/j.paid.2007.11.023>

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- Gardner, S. K., & Holley, K. A. (2011). "Those invisible barriers are real": The progression of first-generation students through doctoral education. *Equity & Excellence in Education*, 44(1), 77–92. <https://doi.org/10.1080/10665684.2011.529791>
- Holmes, S. W., Kertay, L., Adamson, L. B., Holland, C. L., & Clance, P. R. (1993). Measuring the impostor phenomenon: A comparison of Clance's IP scale and Harvey's I-P scale. *Journal of Personality Assessment*, 60(1), 48–59. [https://doi.org/10.1207/s15327752jpa6001\\_3](https://doi.org/10.1207/s15327752jpa6001_3)
- Joinson, C. (1992). Coping with compassion fatigue. *Nursing*, 22(4), 116, 118–119, 120.
- Leahy, C. M., Peterson, R. F., Wilson, I. G., Newbury, J. W., Tonkin, A. L., & Turnbull, D. (2010). Distress levels and self-reported treatment rates for medicine, law, psychology and mechanical engineering tertiary students: Cross-sectional study. *Australian and New Zealand Journal of Psychiatry*, 44(7), 608–615. <https://doi.org/10.3109/00048671003649052>
- Lefebvre, H., & Levert, M. J. (2006). Breaking the news of traumatic brain injury and incapacities. *Brain Injury*, 20(7), 711–718. <https://doi.org/10.1080/02699050600744244>
- Legassie, J., Zibrowski, E., & Goldszmidt, M. (2008). Measuring resident well-being: Impostorism and burnout syndrome in residency. *Journal of General Internal Medicine*, 23(7), 1090–1094. <https://doi.org/10.1007/s11606-008-0536-x>
- Mason, H. D., & Nel, J. A. (2012). Compassion fatigue, burnout and compassion satisfaction: Prevalence among nursing students. *Journal of Psychology in Africa*, 22(3), 451–455. <https://doi.org/10.1080/14330237.2012.10820554>
- Mathieu, F. (2007). Running on empty: Compassion fatigue in health professionals. *Rehab & Community Care Medicine*, 4, 1–7. <http://www.compassionfatigue.org/pages/RunningOnEmpty.pdf>
- McArthur, M. L., Andrews, J. R., Brand, C., & Hazel, S. J. (2017). The prevalence of compassion fatigue among veterinary students in Australia and the associated psychological factors. *Journal of Veterinary Medical Education*, 44(1), 9–21. <https://doi.org/10.3138/jvme.0116-016R3>
- McKenna, L., & Rolls, C. (2011). Undergraduate midwifery students' first experiences with stillbirth and neonatal death. *Contemporary Nurse*, 38(1–2), 76–83. <https://doi.org/10.5172/conu.2011.38.1-2.76>
- Oriel, K., Plane, M. B., & Mundt, M. (2004). Family medicine residents and the impostor phenomenon. *Family Medicine*, 36(4), 248–252. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.552.2313&rep=rep1&type=pdf>
- Orygen: The National Centre of Excellence in Youth Mental Health. (2017). *Under the radar: The mental health of Australian university students*. Author. [https://www.orygen.org.au/Policy-Advocacy/Policy-Reports/Under-the-radar/Orygen-Under\\_the\\_radar\\_report.aspx](https://www.orygen.org.au/Policy-Advocacy/Policy-Reports/Under-the-radar/Orygen-Under_the_radar_report.aspx)

## IMPOSTOR SYNDROME AND COMPASSION FATIGUE

- Rakestraw, L. (2017). How to stop feeling like a phony in your library: Recognizing the causes of the imposter syndrome, and how to put a stop to the cycle. *Law Library Journal*, 109(3), 465–476. <https://www.aallnet.org/wp-content/uploads/2018/01/Vol-109-No-3-How-to-Stop-Feeling-Like-a-Phony-in-Your-Library.pdf>
- Robinson-Walker, C. (2011). The imposter syndrome. *Nurse Leader*, 9(4), 12–13. <https://doi.org/10.1016/j.mnl.2011.05.003>
- Sakulku, J., & Alexander, J. (2011). The impostor phenomenon. *International Journal of Behavioral Science*, 6(1), 74–97. <https://doi.org/10.14456/ijbs.2011.6>
- Sexton, D. (2013). “As good as it's going to get”: Bad news conversations in neurology—Challenges for occupational therapists. *The British Journal of Occupational Therapy*, 76(6), 270–279. <https://doi.org/10.4276/030802213X13706169932860>
- Sorenson, C., Bolick, B., Wright, K., & Hamilton, R. (2016). Understanding compassion fatigue in healthcare providers: A review of current literature. *Journal of Nursing Scholarship*, 48(5), 456–465. <https://doi.org/10.1111/jnu.12229>
- Stallman, H. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45(4), 249–257. <http://doi.org/10.1080/00050067.2010.482109>
- Stamm, B. H. (2010). *The concise ProQOL manual*. <https://proqol.org/uploads/ProQOLManual.pdf>
- Vandekieft, G. K. (2001). Breaking bad news. *American Family Physician*, 64(12), 1975–1979. <https://www.aafp.org/afp/2001/1215/p1975.html>
- Villwock, J. A., Sobin, L. B., Koester, L. A., & Harris, T. M. (2016). Impostor syndrome and burnout among American medical students: A pilot study. *International Journal of Medical Education*, 7, 364–369. <https://doi.org/10.5116/ijme.5801.eac4>
- Willans, J., & Seary, K. (2011). “I feel like I'm being hit from all directions”: Enduring the bombardment as a mature-age learner returning to formal learning. *Australian Journal of Adult Learning*, 51(1), 119–142.