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Measuring, monitoring and managing the psychological well-being of first year university students

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ABSTRACT *This paper profiles the psychological well-being of students in their initial year of university. There were three aims: to measure the impact of arrival at university on the psychological well-being of first year students, to monitor (i.e. profile) the shape of psychological well-being across the first year, and to investigate how students manage their well-being in relation to the use of university counselling services. Data were collected on four occasions, with 84% of all first year students at a UK university (4,699 students) completing the questionnaire on at least one occasion. Psychological well-being was assessed using the GP-CORE, a general population form of the CORE-OM. Results show that greater strain is placed on well-being once students start university compared to levels preceding entry. This strain rises and falls across the year but does not return to pre-university levels. Items tapping depression and anxiety suggest that the first year of university is a time of heightened anxiety but not a particularly depressive time. The findings are discussed in relation to students' experience of higher education and how to match student needs with university counselling service provision.*

There is increasing research interest in describing the psychological well-being of students both in the US (Bertocci *et al.*, 1992; Hayes, 1997) and the UK (Grant, 2002; Grant & Wolfson, 2001; Humphrey & McCarthy, 1998; Monk & Mahmood, 1999; Roberts *et al.*, 1999). This, in part, reflects the recognition that the lives of students are different in many ways to that experienced by students 20 or 30 years ago. Students' lives are becoming increasingly pressurised due to changes such as the abolition of student grants in favour of student loans and the introduction of tuition fees. Such changes have placed students under increasing financial pressure (Hesketh, 1999). Students are also facing greater academic

pressures. As more people enter higher education, degrees are becoming more common. Consequently, the pressure to get a good degree is greater than ever before. However, while higher education is expanding, there is concern that the structures currently in place to support students are not developing at an equivalent pace (Davy *et al.*, 2000).

Research on the psychological well-being of students has focused on either comparisons between students and the general population or comparisons within a student sample. Comparisons between students and the general population have reported, in general, that students fare worse than the general population on measures of psychological well-being (e.g. Roberts & Zelenyanski, 2002; Roberts *et al.*, 1999; Stewart-Brown *et al.*, 2000). Some of the within-population studies have focused on identifying causes of stress for students (e.g. Grant, 2002; Tyrell, 1992) and others have tried to discover the relationship between these and mental health (e.g. Andrews & Wilding, 2004; Monk, 2004). Academic, relationship and financial difficulties have been found to be some of the major causes of stress for students (Grant, 2002) and relationships between these variables and mental health have also been found (e.g. Andrews & Wilding, 2004; Monk, 2004; Roberts & Zelenyanski, 2002).

Against this background, a recent report by the Royal College of Psychiatrists (RCP, 2003) reviewed the status of student mental health. One key area which they identified related to changes over time: ‘... there are few data from which to draw any firm conclusions regarding temporal changes in mental health problems among students’ (pp. 20–21). The majority of published data provide no evidence for increasing symptoms across years (e.g. Grant, 2002; Hawton *et al.*, 1995). However, these results may be due to the methodologies used in published research. The standard approach in surveys of students involves collecting data from a sample of students using a standard measure of well-being and then comparing these findings in terms of changes with data obtained from previous cohorts. There are a number of methodological weaknesses that need consideration and which might be seen to constrain the utility of the available evidence. These issues are (1) the need to establish a baseline level prior to university entrance; (2) frequency of sampling within a single cohort; and (3) sample size.

First, failure to obtain a baseline measure of students’ well-being prior to university entrance undermines research findings by failing to examine the major transition from their school and home environment to higher education. Although it might be argued that sampling second and third year students is not as vulnerable to this threat, sampling of first or entry level students requires evidence of the *transition* from home to university. Without it, studies can only make assumptions about this phase and its impact on students. Two exceptions have been the study by Gerdes and Mallinckrodt (1994) which sampled students 1 month prior to arrival and then followed them up after 7 weeks and research by Andrews and Wilding (2004) which sampled students 1 month before university entry and at mid-course. Research designs need to incorporate a baseline prior to students’ arrival at university.

Second, obtaining data at only a single time-point during the course of the academic year is inadequate in capturing the complexity of the academic year. This

approach leads to an assumption that there is no variation in psychological well-being across the academic year. In contrast, a feature of the academic year in higher education is that it is not uniform. There are clearly times of stress and pressure (e.g. assessment deadlines and exams) which occur at discrete times over the course of the year. Indeed research by Andrews and Wilding (2004) which sampled the same cohort of students at two time-points found that some participants showed a significant increase in anxiety and depression midway through their course, whereas others decreased. Hence, basing results on data collected at one point in time would not seem to capture the various ebbs and flows characteristic of academia. Therefore studies need to incorporate more than a single administration of questionnaires.

Third, sample sizes have been generally small and normally below 300 (e.g. Fisher & Hood, 1987, $n=210$; Reifman & Dunkel-Schetter, 1990, $n=161$; Tyrell, 1992, $n=94$). The study by Webb *et al.* (1996) is an exception to these small numbers, sampling 3,057 second year students. However, this study collected data from 10 UK universities resulting, on average, in only 300 second year students sampled per university. Similarly the study by Adlaf *et al.* (2001) was drawn from 16 universities, thereby averaging approximately 470 students per institution. This approach limits the conclusions which can be drawn in light of the fact that any university has multiple thousands of students and a sample of 300–500 is unlikely to represent the full range of student responses.

The aim of the present study was to take account of these issues in an investigation of the temporal nature of psychological well-being of students entering their first year at university. That is, we wanted to *measure* the psychological well-being of students via a design which collected baseline data on students prior to their arriving at university utilising a standardised measure sensitive to change and derived from a measure in widespread use. We then aimed to *monitor* their psychological well-being across the academic year in order to provide a fuller understanding of the ebb and flow of psychological well-being over time by administering a survey at three subsequent time-points in their initial year and requesting all students to complete the questionnaires. However, mindful that the authors of the RCP report (2003) identified the need to focus on mental health as opposed to the general population of students, we used statistical procedures drawn from the field of clinical psychology to identify two differing (but likely overlapping) populations: a population of students who might be deemed psychologically *vulnerable* and a population that could be considered psychologically *normal*.

In order to identify these two populations, we used the GP-CORE (Sinclair *et al.*, 2005), a general population version of a standard measure of psychological well-being—the CORE-OM (Barkham *et al.*, 2001, 2005; Evans *et al.*, 2002). Specifically, we aimed to focus on problems experienced by students. In particular, given the recent focus on anxiety and depression within students (see Andrews & Wilding, 2004), we focused on items specifically tapping depression and anxiety. We then used this information to look at how potentially differing groups *managed* their well-being via accessing support for student mental health.

Method

Design

The study comprised one part of a larger scale project—termed UNiversity Quality of Life and Learning (UNIQLL; Audin *et al.*, 2003) [1]—which focuses on a range of issues pertinent to students' life and learning experiences while at university such as debt (Cooke *et al.*, 2004a) and social class (Cooke *et al.*, 2004b). The study utilised an open cohort design in which students were surveyed at four time-points during their entry year: (1) on receiving their initial information pack at home from the university during August (baseline, i.e. T1); (2) week 4 in semester 1 (time 2, i.e. T2); (3) the end of semester 1 (time 3, i.e. T3); and (4) the end of semester 2 (time 4, i.e. T4).

Participants

The potential population comprised 5,600 students at a red-brick university. Table 1 provides a breakdown of the demographics of the students. All research was conducted following appropriate ethical guidelines.

Over the four surveys, 84% of all students completed the survey on at least one occasion yielding a sample of 4,699 students. In addition, 2,415 completed it on two occasions, 549 students completed it on three occasions, and 250 students completed the questionnaire at all four administrations. All analysis performed on the wider unmatched sample was replicated on the matched student sample ($n = 250$); the pattern of results was virtually identical for both data sets.

Measure

All surveys included the GP-CORE (Sinclair *et al.*, 2005), a general population version of the CORE-OM (Barkham *et al.*, 2001, 2005; Evans *et al.*, 2002). The GP-CORE comprises 14 items drawn from the CORE-OM which itself consists of 34

TABLE 1. Sample characteristics

Demographics	Time 1: <i>N</i> (%) ^a	Time 2: <i>N</i> (%) ^a	Time 3: <i>N</i> (%) ^a	Time 4: <i>N</i> (%) ^a	Overall: <i>N</i> (%) ^a
Males	1,117 (40)	538 (42)	834 (39)	635 (38)	1,860 (40)
Females	1,707 (60)	654 (51)	1,092 (51)	865 (52)	2,406 (51)
Below 21 at entry	2,676 (95)	1,124 (88)	1,813 (85)	1,418 (85)	4,012 (85)
Above 21 at entry	140 (5)	68 (5)	113 (5)	82 (5)	246 (5)
Arts	560 (20)	242 (19)	486 (23)	360 (30)	1,024 (22)
Science	1,173 (42)	676 (53)	1,049 (49)	852 (70)	2,115 (45)
Other	1,093 (39)	366 (29)	611 (29)	471 (28)	1,560 (33)
Total number (% response rate)	2,826 (50)	1,282 (23)	2,132 (38)	1,671 (30)	4,699 (84)

^aDemographic information was not available for all participants.

items tapping the domains of subjective well-being, symptoms (anxiety, depression and physical problems), life functioning, and risk. We used the general population (GP) version of the CORE-OM as being more appropriate for a student population (Sinclair *et al.*, 2005). All items are scored from 0 ('not at all') to 4 ('all the time') and item scores are totalled and divided by 14 yielding a mean item score of between 0 and 4. Paralleling procedures employed in reporting findings using the CORE-OM, we multiplied the mean item score by 10 yielding a score from 0 to 40 and referred to this as a student's *general* score. The term *general* score contrasts with the term *clinical* score used for the CORE-OM (for details, see Leach *et al.*, 2006). Lower scores indicate better mental health. The psychometric properties of the GP-CORE have been reported elsewhere (see Sinclair *et al.*, 2005) and showed correlations with the CORE-OM in the order of 0.90 to 0.95. The GP-CORE demonstrated high internal consistency, with Cronbach's alpha exceeding 0.80 at all four time-points.

At T4 students were asked to indicate if they had used the university counselling service during the current academic year, and if so how they rated the service received and if not why not.

Analyses and calculation of thresholds

To assess differences between students from the vulnerable and normal populations, cut-offs were calculated on the basis of the data presented in Sinclair *et al.* (2005). This allowed us to distinguish between students who were within non-clinical population levels of well-being (i.e. normal) from students whose GP-CORE score resembled that of students undergoing counselling (i.e. vulnerable). The formula used to calculate the cut-offs was:

$$\frac{\text{mean}_{\text{clin}} \text{SD}_{\text{norm}} + \text{mean}_{\text{norm}} \text{SD}_{\text{clin}}}{\text{SD}_{\text{norm}} + \text{SD}_{\text{clin}}}$$

The cut-off point was recalculated at each time-point in order to ensure an appropriate threshold between the two sub-populations at any given time. Hence, we generated two distinct sub-populations of students at each administration as a means for investigating whether the profile of psychological well-being over time would be different, other than being at a higher level. In order to provide better differentiation across students' experiences, we further divided each of these sub-populations into upper and lower bands determined by the midpoint of the range (i.e. 'lower normal population', 'upper normal population', 'lower vulnerable population', 'upper vulnerable population').

Results

The results focus on three issues: (1) measuring the change in well-being from pre-university to arrival at university; (2) monitoring the profile of psychological well-being

across the initial year at university; and (3) identifying how the university student population as a whole utilise university counselling services.

The impact on psychological well-being of arrival at university

The mean general scores and the associated 95% confidence intervals are presented in Table 2. ANOVA showed a significant difference in the general scores across time ($F=71.943$, $df=3$, $p=0.00$) and subsequent pairwise comparisons (Bonferroni adjustment) revealed significant differences between each of the time-points with the exception of T2–T4 (see Table 3). For both normal and vulnerable populations, scores at T1 were lowest and the plots for T2–T4 for both groups broadly reflect inverted U-shaped curves (i.e. well-being gets worse and then improves). Fig. 1 presents a notched box plot of the two distributions.

Differences in psychological well-being due to demographic variables

Independent t -tests were used to compare the general scores on two key variables—gender and degree subject—throughout the first year of university (see Table 1 for sample demographics). At T1 there were differences due to degree subject and gender. The mean general score was significantly higher ($t=3.81$, $df=1731$, $p=0.00$) for arts students ($M=11.6$, $SD=5.3$) than for science students ($M=10.6$, $SD=5.2$). In addition, the general score was significantly higher ($t=-4.44$, $df=2822$, $p=0.00$) for female students ($M=11.2$, $SD=5.4$) compared with male students ($M=10.3$, $SD=5.2$). Because gender and subject were significant at T1, an ANOVA was computed to test for a possible interaction effect

TABLE 2. GP-CORE general scores overall and for vulnerable and normal groups

GP-CORE general score	Time 1	Time 2	Time 3	Time 4
Overall				
M (SD)	10.8 (5.2)	12.3 (5.7)	13.1 (5.8)	12.4 (5.9)
95% CI	10.1–11.4	11.6–13.0	12.2–13.7	11.6–13.0
Normal sample				
M (SD)	8.9 (3.6)	10.0 (3.9)	10.7 (4.1)	10.1 (4.1)
95% CI	8.7–9.0	9.8–10.3	10.5–10.9	9.9–10.3
Vulnerable sample				
M (SD)	19.0 (3.1)	20.9 (3.8)	21.2 (3.5)	20.6 (3.4)
95% CI	18.7–19.2	20.4–21.4	20.9–21.5	20.2–20.9
N (%) of students in vulnerable sample at each time-point				
Overall	487 (17)	263 (22)	462 (24)	344 (23)
Men	191 (17)	132 (25)	204 (25)	154 (24)
Women	293 (17)	131 (20)	258 (23)	190 (22)

TABLE 3. Pairwise comparisons (Bonferroni adjustment) for GP-CORE general scores T1–T4

(I) Time-point	(J) Time-point	Mean difference (i.e. I–J)	Std. error	Sig. ^a	95% confidence interval for difference	
					Lower bound	Upper bound
T1	T2	–1.5	0.02	0.00	–0.20	–0.10
	T3	–2.3	0.02	0.00	–0.28	–0.19
	T4	–1.6	0.02	0.00	–0.20	–0.11
T2	T1	1.5	0.02	0.00	0.10	0.20
	T3	–0.8	0.02	0.00	–0.14	–0.03
	T4	–0.1	0.02	1.00	–0.06	0.05
T3	T1	2.3	0.02	0.00	0.19	0.28
	T2	0.8	0.02	0.00	0.03	0.14
	T4	0.7	0.02	0.00	0.03	0.13
T4	T1	1.6	0.02	0.00	0.11	0.20
	T2	0.1	0.02	1.00	–0.05	0.06
	T3	–0.7	0.02	0.00	–0.13	–0.03

^aBonferroni adjustment made for multiple comparisons.

but yielded a non-significant interaction. At T2 there were no significant differences on any demographic variables (i.e. $p > 0.05$).

We next considered students who populated the vulnerable group at each of the time-points, and the percentages at each time interval are shown in Table 2. Overall, there were few differences due to gender. The confidence intervals for differences between the proportion of males and females who populated the vulnerable group included zero at each time-point. These results suggest that there were similar numbers of male and female students who had GP-CORE scores indicative of psychological vulnerability.

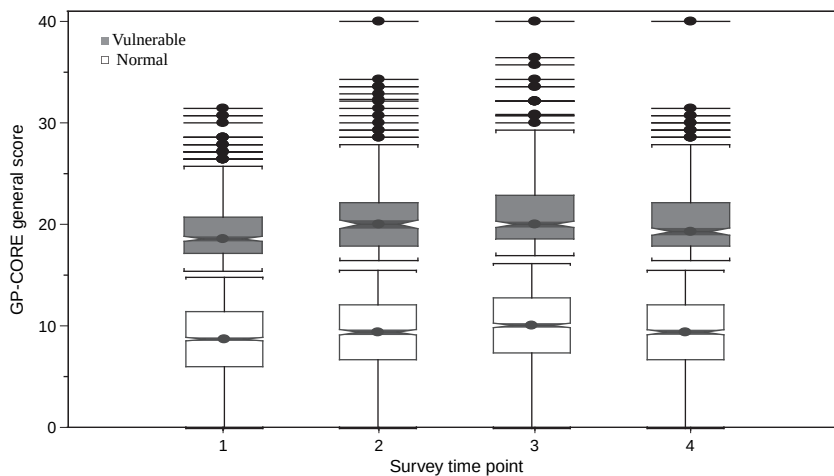


FIG. 1. Mean GP-CORE general scores for the psychologically vulnerable and psychologically normal students sampled at each time-point. *Note.* Lower GP-CORE scores are indicative of better well-being.

Monitoring psychological well-being across first year

Overall the shape of students' psychological well-being during their first year of university can be described as an inverted U function. This shape is consistent for the CORE general score as well as the domains of well-being, functioning, and the physical symptoms cluster of the symptom domain. However, the anxiety and depression items depart from this trend (see Fig. 2). The anxiety mean is elevated for students at T1 ($F=140.56$, $df=6$, $p=0.000$), T2 ($F=15.25$, $df=6$, $p=0.000$), T3 ($F=25.799$, $df=6$, $p=0.000$) and T4 ($F=23.09$, $df=6$, $p=0.000$) when compared to the general CORE score, the domains of well-being, functioning and the clusters of physical symptoms and depression (all pairwise comparisons were significant at $p<0.05$).

How students manage psychological well-being via accessing university counselling services

At T4 25% ($n=380$) of students reported GP-CORE scores in the lower normal range, 52% ($n=776$) upper normal, 22% ($n=12$) lower vulnerable and 8% ($n=12$) upper vulnerable. Of these students 3% ($n=45$) reported using the student counselling services. Of these students who used the services, 62% ($n=25$) had GP-CORE scores at T4 indicative of a non-clinical population (i.e. lower and upper normal population). Students within the upper vulnerable group were more likely to have accessed student counselling services with 36% ($n=4$) of students in this group accessing university student counselling services. Within the vulnerable group, only 5% ($n=15$) of the sample used the service. At least 75% ($n=242$) of those in this group who did not access the counselling service gave their reason as being 'not needing to'.

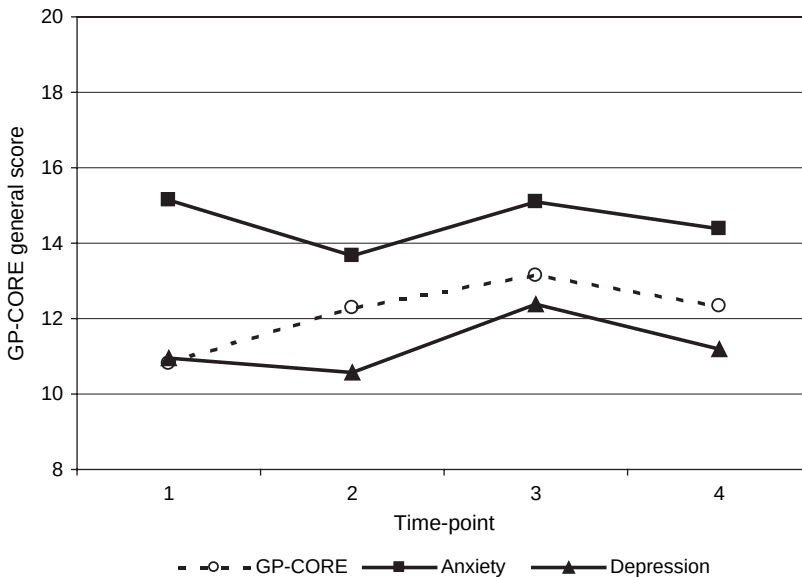


FIG. 2. Students' GP-CORE general score and anxiety and depression item scores at each time-point.

MANOVA revealed a significant difference between those students in the normal population who attended counselling ($n=25$) and those who did not attend counselling ($n=1,110$) with regard to the well-being cluster ($F=5.65$, $df=1$, $p=0.02$) and the items tapping depression ($F=23.53$, $df=1$, $p=0.00$), anxiety ($F=7.63$, $df=1$, $p=0.00$) and physical symptoms ($F=5.47$, $df=1$, $p=0.00$). In all instances students who attended counselling had poorer scores and these results were independent of students' psychological status (i.e. vulnerable or normal).

Discussion

This paper aimed to address three issues: first, to *measure* the psychological well-being of students identified as belonging to a psychologically normal population and a psychologically vulnerable population; second, to *monitor* their well-being at four time-points in their initial year at university; and third, to identify how these potentially differing groups *managed* their well-being via accessing university counselling services.

In terms of the first aim of measuring the psychological well-being of students, our multiple administration approach enabled us to reach over 80% of students at any one time-point in the study with 58% of students completing at least one survey during the university year (i.e. excluding pre-registration). This yield compares with response rates reported in the literature of between 49% (Reifman & Dunkel-Schetter, 1990) and 71% (Tyrell, 1992). While the current study's response rate is within this range, the absolute number of students participating is of the order of 10 times that reported in the majority of literature. Most importantly, the response rates quoted in the present study are percentages of the total year 1 full-time student population. By contrast, other surveys target a particular subgroup of students and report percentage response rates as a function of that identified group, with an overriding tendency for this to yield higher percentage response rates. Our strategy of multiple administration intervals was therefore mindful of attempts to sample all students and, in this context, would appear to have been relatively successful with the result that the data in the present study are considerably more robust than that reported elsewhere. Excluding the pre-registration administration, had the survey relied on only one of the term-time administrations, the response rate would have ranged between a low of 23% and a high of 38%. Hence, notwithstanding our interest in collecting data across multiple time-points in order to obtain the shape of change in the year, attempting to sample all year 1 students requires multiple administrations.

In terms of monitoring, our findings show clear evidence that regardless of whether a student's overall psychological well-being is defined as being in the normal or vulnerable population, a greater strain is placed on their psychological well-being at all times once they start at university compared with the period of time immediately preceding entry. Levels of strain towards the end of the university year return to a point closest to their initial time at university but not to pre-university levels. Hence, the findings from this study provide a profile, or shape, of students' psychological well-being while at university (i.e. excluding pre-university

levels) which clearly challenges other models that might depict students' well-being as either uniform (i.e. level) or rising incrementally throughout the year (i.e. higher at the end of the year). Clearly, on purely conceptual grounds, such a profile could not have been shown had only a single administration been adopted. However, more importantly, such a profile would also not have been shown had two administrations been adopted. Indeed, a two-administration strategy would have yielded misleading results if it had sampled either once on starting university and at the end of year—and thereby yielding a uniform level of psychological well-being—or prior to arrival and end of year—and thereby yielding an incremental level of distress.

In terms of the substantive yield from the monitoring phase, the findings suggest that attendance at university can be an anxious time for many students. This is especially salient at the beginning of the year where anxiety is one of the most elevated items, scoring higher than other domain/clusters, suggesting again that university is an anxious but not a depressive time for students. While over the last 20–30 years education has been viewed as a protective 'buffer' to mental health issues, the current findings suggest that higher education is a time of heightened anxiety. If anxiety is a pervasive part of students' university experience, then this is worthy of further research because the effects of this phenomenon on both normal and vulnerable student groups could be considerable. For example, for the normal group elevated anxiety may be one factor influencing students' attitudes towards alcohol in which heightened intake becomes a socially acceptable way of releasing anxiety and worries. For the vulnerable group, elevated anxiety may be a precursor of subsequent depression. Drawing on the psychopathology literature, it is estimated that the economic costs associated with morbidity for anxiety are in the order of 15 times greater than for the affective disorders (Rice & Miller, 1998). Hence, the role of anxiety within the student population deserves attention for both psychological and economic reasons.

In relation to our third question—that is, management—approximately a third of students in the upper vulnerable group accessed university counselling services—a percentage considerably higher than for any of the other three groups. Hence, while this is understandably the largest percentage, it is also flags up that approximately two-thirds of students in this most vulnerable group did not access university counselling services despite elevated GP-CORE scores, with the majority indicating that they had not accessed alternative services. In contrast to this finding, the majority of students sampled who had accessed the counselling service were from the normal population. Hence, while the highest users of the service, when considered as a proportion within each of the four groups, were logically the upper vulnerable group, the largest actual numbers of students using the service were drawn from the upper normal group. Of course, this latter group comprises a larger overall sample and so at one level is not surprising. This finding may be a result of the GP-CORE being completed either post- or during therapy, although it is also plausible to suggest that these students engaged in help-seeking behaviour not due to their GP-CORE score but because of an individual felt need. In terms of limited resources, this would suggest that the service is predominately meeting a felt need rather than necessarily being targeted to, or utilised by, those who might most be in need,

whether it be acknowledged or not by the student. This may also indicate the need for institutions to be more proactive in determining what kind of support, formal or informal, people in the vulnerable group access.

In the context of the study itself, a number of caveats need to be made. The response rates varied across the four survey times such that the respondents at any one time comprised both new and repeat responders rather than a constant group at each time-point; however, analysis on the matched sample revealed similar findings. A further issue concerning the data is that the responses came from students attending a red-brick university and it may be that responses from this university are not generalisable to other universities. The most appropriate way to test this hypothesis is to conduct this research at other universities.

In conclusion, the data presented here demonstrate variation in student psychological well-being across the academic year which undermines the use of single time-point data collection when considering student psychological states. The data also suggest that student life is generally anxious. Hence even if higher education is a buffer against long-term hardship (e.g. long-term unemployment) the present findings suggest that it may come at a cost. Further research into student experience of their second and third academic years is needed to compare and contrast with the present results, to provide a clear picture of student well-being across their time at university. In addition, it would be useful to compare student well-being to the well-being of individuals who enter employment rather than go to university. This would provide a clearer indication of the stress of university life.

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Note

- [1] Richard Cooke was a research fellow working on the UNIQoLL project from 2002 to 2003. Bridgette M. Bewick is project manager and Michael Barkham is Director of the UNIQoLL project. Kerry Audin and Margaret Bradley were project managers for the UNIQoLL project during 1999–2003 and 2003–2004, respectively.

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