What affects student wellbeing?

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The 2019 HEPI / Advance HE *Student Academic Experience Survey* shows that student wellbeing remains lower than wellbeing among the general population of young people and that anxiety levels have increased since 2018.[1] The report authors, Jonathan Neves and Nick Hillman, make a link between these anxiety levels and a growing volume of student assignments.

Given that student wellbeing is often discussed in terms of access to support and care services, I was interested to explore this effect of academic practice further. Could it be that teaching and feedback are contributing to poor student wellbeing? This Policy Note presents the results from exploring the dataset a little deeper to try to answer this question.

Measuring wellbeing

The large *Survey* of over 14,000 full-time students included four questions on wellbeing originally formulated by the Office for National Statistics, with respondents asked to rank themselves from 0 (low) to 10 (high). Inspection of distributions across these scales indicate a score of 7 is an inflection point in the distributions. So the variables were binarised to simplify subsequent analysis by using a score of 7 as the differentiator between low and high.

Being happy, satisfied and feeling life is worthwhile are closely related to each other. So for the sake of simplicity, life satisfaction is used in the analysis that follows, rather than reporting separately on all three of these related variables. Anxiety shows a different pattern and is analysed separately.

Compositional and contextual effects on student wellbeing

I first look at the effects of 'compositional' variables on life satisfaction and anxiety. These are student characteristics and specifically ethnic identity, type of home area, residential status, commute and paid work. I then look at 'contextual' variables and, specifically, how students' experiences of teaching and feedback affect their life satisfaction and anxiety levels. It is important to have in mind, however, that these are statistical associations. They are not necessarily causal relationships.

While the challenge of higher education and an often low-income student lifestyle might be expected to cause some anxiety and dissatisfaction with life, effects that appear to be driving up anxiety scores to 7 or more, and dissatisfaction with life down to less than 7, are causes for concern. The analysis focuses on the proportion of students reporting these scores.

The effect of ethnic identity

Figure 1 shows a striking relationship between ethnic identity and dissatisfaction with life. A life satisfaction score of less than 7 varies from 42% among Bangladeshi students (highest) to 28% among White students (lowest).

For the multivariate analysis that follows, it helps to simplify the analysis by creating two groups of ethnic identities, one with lower dissatisfaction with life and the other with higher dissatisfaction. Inspecting the gradient of bars in Figure 1 from left to right, there is a step change at the Pakistani category. This was used to compute a new variable that includes all the ethnic identities to the left of Pakistani as a lower dissatisfaction group (White, Not Stated, Chinese, Indian, Other, Other Asian and Mixed identities) and all the identities to the right of Mixed as a higher dissatisfaction group (Pakistani, Black African, Black Other, Black Caribbean and Bangladeshi identities).

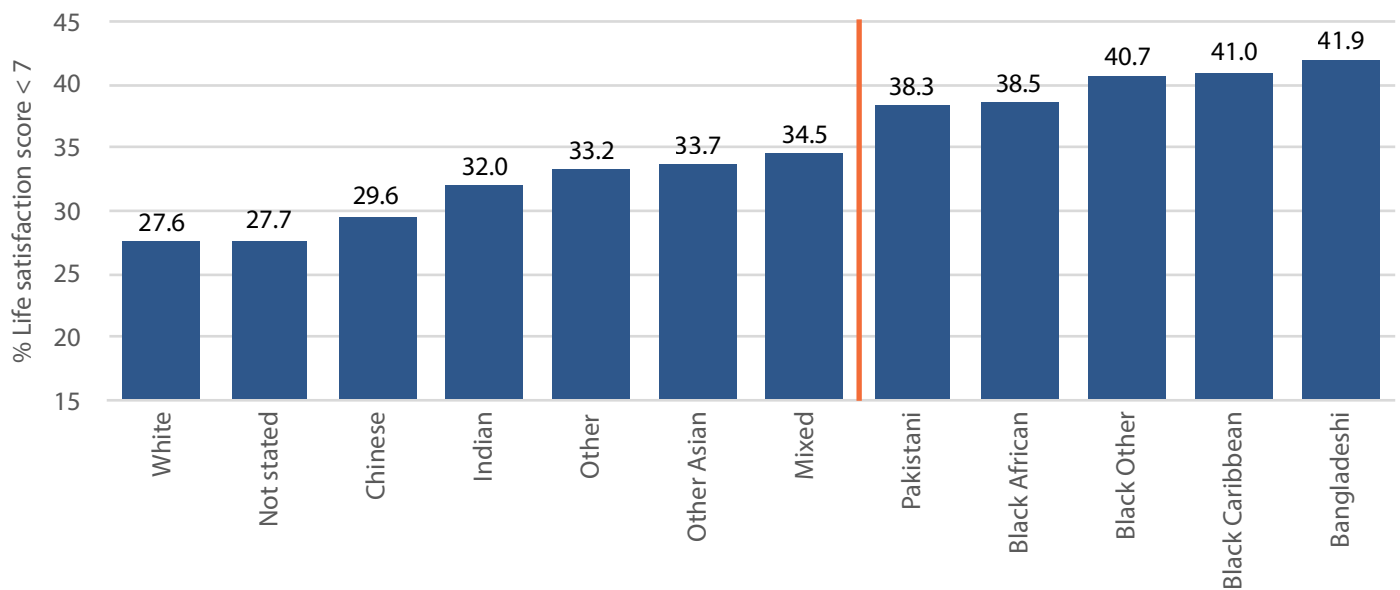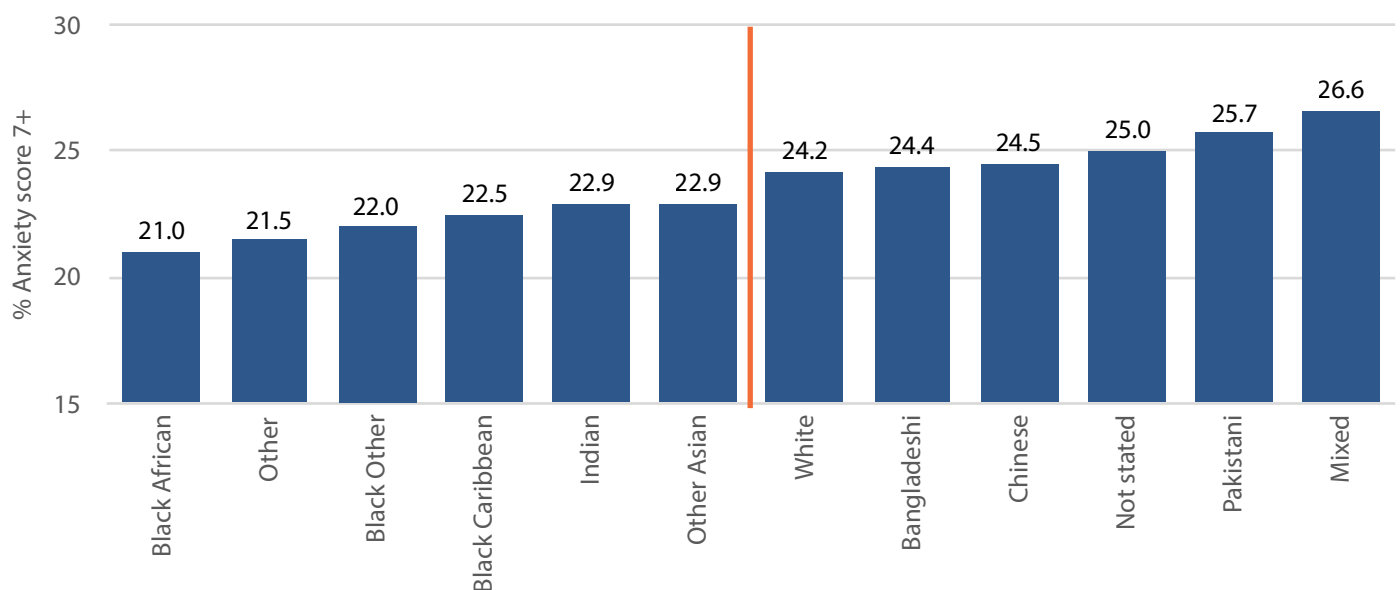*Figure 1: Dissatisfaction with life by ethnic identity*

Figure 2 shows a relationship between ethnic identity and high anxiety, although it is less strong than with life satisfaction. Anxiety scores of 7 or more vary from 27% among Mixed identity students (highest) to 21% among Black African students (lowest).

*Figure 2: High anxiety by ethnic identity*

Taking the same approach as with life satisfaction, a binary variable was computed based on the step change in the gradient that occurs at the White category. Reading from left to the right, the lower anxiety group comprises Black African, Other, Black Other, Black Caribbean, Indian and Other Asian identities, and the higher anxiety group comprises White, Bangladeshi, Chinese, Not stated, Pakistani and Mixed identity students.

An interesting observation to make about Figures 1 and 2 is that crude White / Black or BAME / White characterisations do not capture what is going on. Both White and Chinese students, for example, tend to be more anxious but also more satisfied with life. Black students tend to be less anxious but are more likely to be dissatisfied with life.

The effect of area of home residence

POLAR is a classification based on the level of young people's participation in higher education, grouped into five quintiles from low to high that broadly reflect levels of deprivation. Anxiety and life satisfaction vary by the POLAR areas from which students come, although not by much. The effect on dissatisfaction with life is stronger, varying from 35% among students from the lowest participation quintile to 30% among students from the highest participation quintile (see Figure 3).

Figure 3: Dissatisfaction with life by POLAR quintile
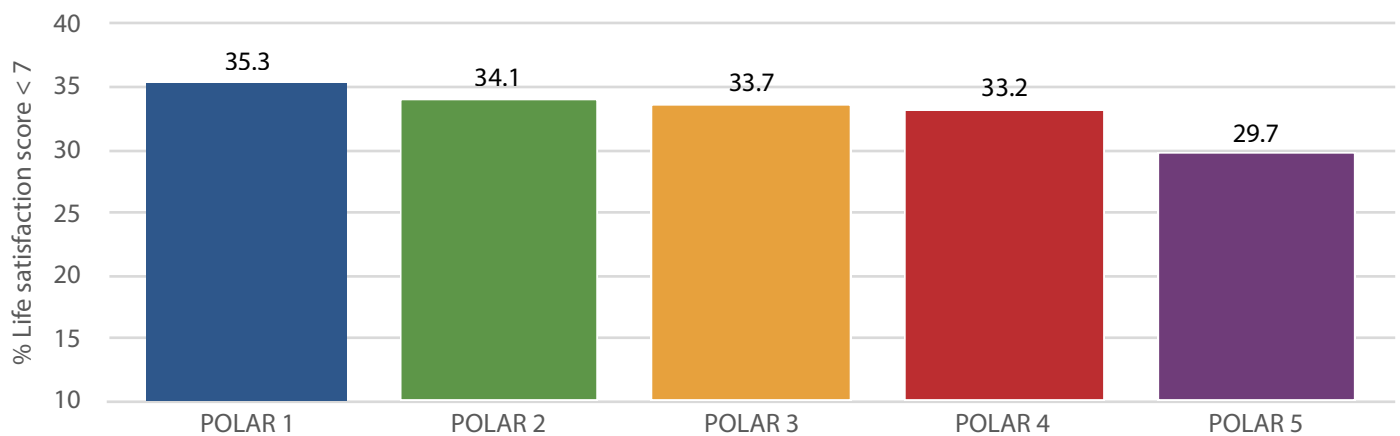
Turning to anxiety scores, Figure 4 shows how the proportion of high anxiety scores varies from 23% among students from the lowest participation areas (POLAR 1) to 20% among students from the highest participation areas (POLAR 5). It is unclear why POLAR 3 has a lower anxiety score than POLAR 4, although the general trend is clear.

*Figure 4: High anxiety by POLAR quintile*
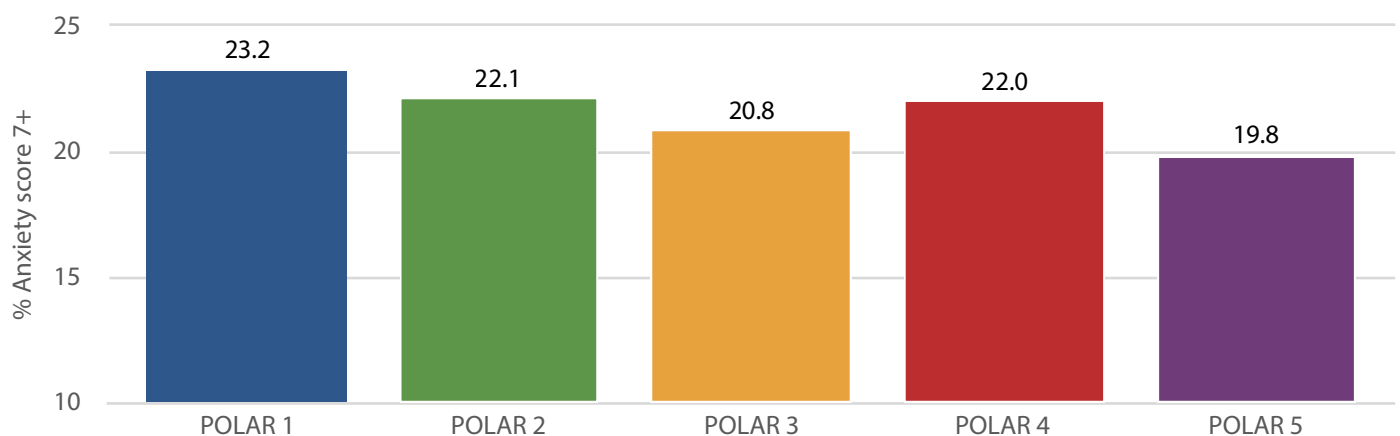
The effects of residential status and commuting

Other living circumstances are likely to have effects on anxiety and life satisfaction, and two of these are captured in the *Survey* that are interesting to explore: whether students continue living at home or relocate to study; and whether they have short or long commutes.

Neither of these variables is associated with students' levels of anxiety but there are significant effects on life satisfaction. Figure 5 shows that living at home while studying is associated with higher dissatisfaction with life than relocating to study, and this is largely regardless of length of commute. While relocating to study is associated with higher life satisfaction, this is less so if combined with a long commute (more than 5 miles).

Figure 5: Dissatisfaction with life by home / commute status
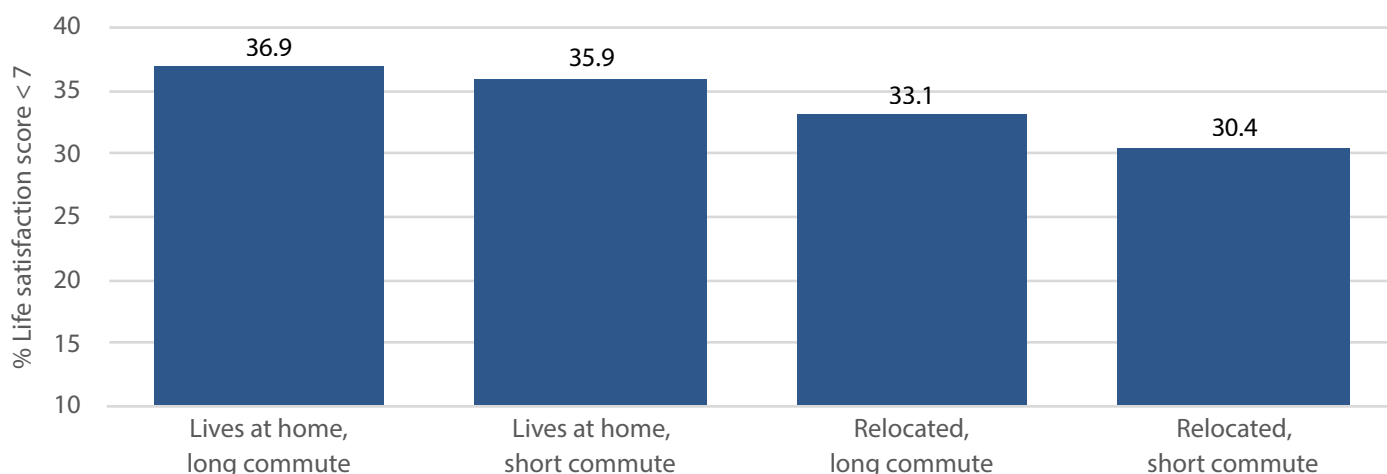
The data also show that only 23% of POLAR 5 students in the sample live at home, while 37% of POLAR 1 students do. Similarly, while only 25% of POLAR 5 students have a long commute, 33% of POLAR 1 students do.[2]

The effect of paid work

In a previous HEPI Policy Note, I showed that being in paid employment for long hours during term time and devoting fewer hours to independent study both have significant effects on students' self-reported learning gain.[3] In the present analysis, it is clear that students living in more disadvantaged circumstances are more likely to work long hours. While only 13% of POLAR 5 students work 12 or more hours a week, this rises to 20% among POLAR 1 students.

The decision to stay at home may be influenced by needing to keep a part-time job in the area in which they live, and there is some evidence that commuter students' jobs entail longer hours. While only 12% of students who relocate to study worked 12 or more hours a week, this rises to a striking 25% among students who continue living at home. However, working long hours has no significant effect on anxiety and only a small negative effect on life satisfaction (although statistically significant).

The effects of teaching and feedback experiences

The *Survey* includes questions on students' experiences of teaching and feedback, and these all show significant associations with anxiety and life satisfaction. One of the strongest effects is students' reports of the proportion of staff teaching them who are helpful and supportive.

Overall, 62% of students say all or most staff are helpful and supportive, 22% say half and half and 7% say few or none. Figure 6 shows that, as the proportion of staff experienced as helpful and supportive declines, so the proportion of students reporting a high level of anxiety increases, from 22% to 33%.

Other effects – while not quite so strong – are similar, such as receiving useful feedback and the subject being made interesting by teaching staff. While these effects are slightly smaller, they affect more students. This is because a relatively high proportion of students report fewer than all or most staff giving useful feedback (41%) or making the subject interesting (40%) compared to the proportion of students reporting fewer than all or most staff being helpful and supportive (29%).

Figure 6: High anxiety by proportion of staff who were helpful and supportive
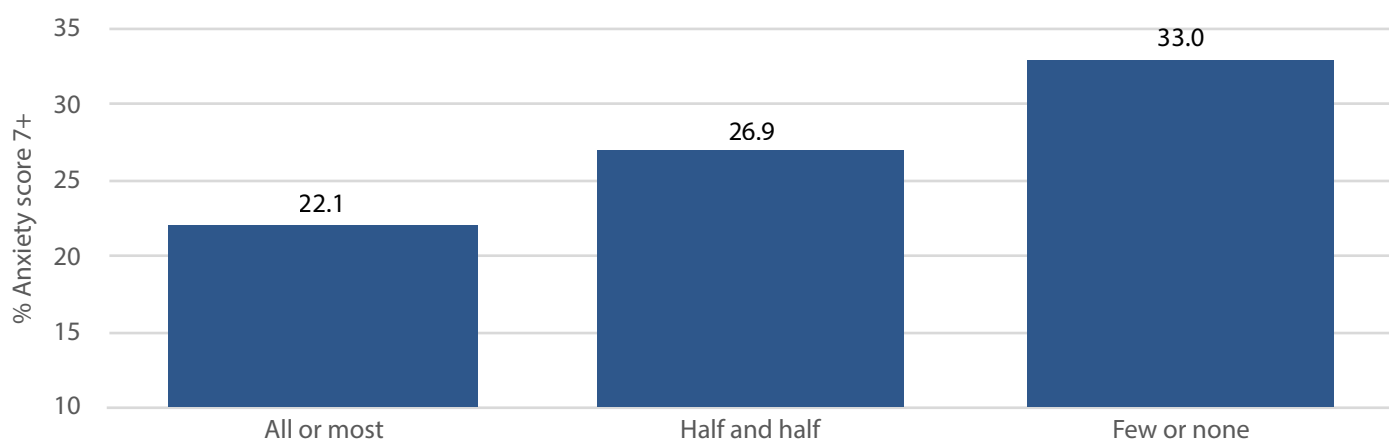
These effects are even stronger on life satisfaction. Figure 7 shows that, while dissatisfaction with life was reported by 24% of students who feel all or most staff are helpful and supportive, this rises to over double that rate, 49%, among students who feel few or no staff are helpful and supportive.

Figure 7: Proportion of staff who were helpful and supportive by dissatisfied with life
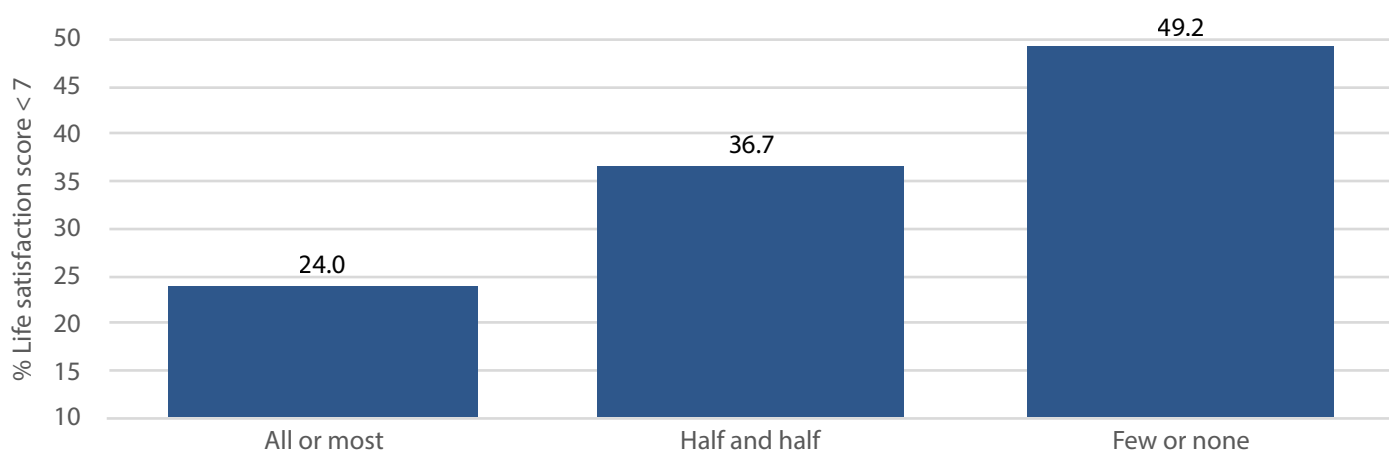
Multivariate analysis

So far, only the bivariate associations between two variables have been explored, posited as the effect of one variable on another. But the reality of students' lives is that all these variables are likely to be influencing their wellbeing in combination. I used logistic regression

to analyse the variables together, enabling the independent effect of each variable to be identified when the effects of other variables in the model are held constant.

The models reported are all 'best fitting' in terms of being groups of variables from the *Survey* that together explain the most variation in life satisfaction or anxiety scores. Only statistically significant effects are reported, that is where the probability of the effect on anxiety or life satisfaction happening just by chance is less than 5%. Once other variables are included in the model for anxiety, both residential status and commute are no longer significant, that is the effect of these variables on anxiety appears to be due to the effects of other variables in the model. However, residential status stays significant for life satisfaction, although not commuting long distances. Interactions were also explored, such as the possibility that ethnic identity only has effects when combined with certain POLAR quintiles but not others. No interaction effects were found.

Risk of high dissatisfaction with life

Table 1 shows an analysis of the risk of life dissatisfaction among students in the sample. The 'dependent' variable in this analysis is a score of less than 7 for life satisfaction. There are seven 'independent' variables listed in the first column of the table, which also shows what two categories of each independent variable are being compared, essentially comparing the effect on the dependent variable of high compared to low values of the independent variable. The second column is the odds ratio, representing the relative odds that a life satisfaction score of less than 7 will occur if the independent variable has the value of its first category compared to its second.

An odds ratio of 1 means that there is no effect, while the higher the odds above 1 the greater the effect. Odds ratios cannot be compared across variables or models as they are a measure of the relative effect of two categories of a single independent variable on the dependent variable, but they give an idea of how important the variable is with regard to influencing an outcome.

The final column marked 'C.I.' is the confidence interval, or the margin of error for the estimated effect within which we can have at least 95% confidence that the true effect is likely to occur. The significance levels for the independent effects of each of these variables on life satisfaction are all less than 0.01, that is there is less than a 1% probability of the effect being due to chance.

We can see from Table 1 that students who report that they experience few or no helpful teachers are 2.46 times (146%) more likely to report a high level of life dissatisfaction than students who report all or most teachers are helpful. Students who report half and half of their teachers as helpful are 1.63 times (63%) more likely to report a high level of life dissatisfaction than students who report all or most teachers as helpful.

There is a smaller but marked effect of fewer teachers giving useful feedback. Students who report that they experience few or no teachers giving useful feedback are 1.50 times (50%) more likely to report a high level of life dissatisfaction than students who report all or most teachers giving useful feedback. Students who report half and half of their teachers giving

useful feedback are 1.32 times (32%) more likely to report a high level of life dissatisfaction than students who report all or most teachers giving useful feedback.

These effects are independent of the effects of the three compositional variables in the model: ethnic identity; POLAR; and staying at home. These also have significant independent effects that increase the relative risk of high life dissatisfaction scores, by 15%, 20% and 23% respectively, but they do not appear to matter as much to life dissatisfaction as differences in students' experiences of teaching and feedback.

Table 1: Independent effects on dissatisfaction with life (score < 7) in a multivariate model

Variable	Odds ratio	95% C.I.
Few or no helpful teachers compared to all or most are helpful	2.46	2.27-2.67
Half and half of teachers are helpful compared to all or most	1.63	1.54-1.72
Few or no teachers gave useful feedback compared to all or most	1.50	1.40-1.60
Half and half of teachers gave useful feedback compared to all or most	1.32	1.25-1.40
Ethnic groups with higher life dissatisfaction compared to lower	1.15	1.07-1.23
POLAR 1- 4 compared to POLAR 5	1.20	1.14-1.26
Stayed at home compared to relocated to study	1.23	1.17-1.29

High anxiety

Table 2 shows an analysis for the risk of high anxiety among students in the sample, with the dependent variable being an anxiety score above 7. Significance levels are again all high, with a less than 1% probability of effects being due to chance.

There is a marked effect on higher anxiety of fewer helpful teachers, with anxiety getting worse the fewer helpful teachers that students report they have experienced**.** Students who report few or no helpful teachers are 1.65 times (65%) more likely to report a high level of anxiety than students who report all or most teachers as helpful. Students who report half and half of their teachers as helpful are 1.24 times (24%) more likely to report a high level of anxiety than students who report all or most teachers as helpful.

There is a smaller but marked effect for fewer teachers giving useful feedback. Students who report that they experience few or no teachers giving useful feedback are 1.28 times (28%) more likely to report a high level of anxiety than students who report all or most teachers giving useful feedback. Students who report half and half of their teachers giving useful feedback are 1.15 times (15%) more likely to report a high level of anxiety than students who report all or most teachers giving useful feedback. These effects are independent of the effects of the two compositional variables in the best fitting model: ethnic identity and POLAR, which both also have independent effects that increase the relative risk of high anxiety scores, by 32% and 14% respectively.

Table 2: Independent effects on high anxiety (score > 7) in a multivariate model

Variable	Odds ratio	95% C.I.
Few or no teachers are helpful compared to all or most	1.65	1.51-1.81
Half and half of teachers are helpful compared to all or most	1.24	1.16-1.31
Few or no teachers gave useful feedback compared to all or most	1.28	1.19-1.38
Half and half of teachers gave useful feedback compared to all or most	1.15	1.08-1.22
Ethnic groups with higher anxiety compared to lower	1.32	1.21-1.45
POLAR 1- 4 compared to POLAR 5	1.14	1.07-1.20

Conclusions

This analysis identifies a number of factors that may be increasing the risk of high anxiety levels and dissatisfaction with life among higher education students, with both compositional and contextual factors in play.

While I do not want to downplay the compositional effects of ethnic identity and disadvantage, or living at home, it is noteworthy that when these effects are controlled for in statistical models we see significant effects on both anxiety and satisfaction with life of students' experiences of helpful teachers and useful feedback. That these may be causal is supported by the 'dose-response' relationship: as the proportion of students reporting helpful teachers and useful feedback declines, so the proportion of students reporting high anxiety and dissatisfaction with life rises.

While we cannot rule out that as students become more dissatisfied or anxious for other reasons they may tend to report their teachers as less helpful or feedback as less useful, the consistent patterns found in these data suggest a wellbeing gain from improving teaching and feedback measures. Until intervention studies investigate this directly, the precautionary principle would suggest acting on the evidence from statistical associations.

Higher education institutions should see increasing their students' experiences of helpful teachers and useful feedback not just as important to student achievement but also as part of their wellbeing strategies.

Endnotes

1   Jonathan Neves and Nick Hillman, HEPI / Advance HE *Student Academic Experience Survey 2019,* 2019 https://www.hepi.ac.uk/wp-content/uploads/2019/06/Student-Academic-Experience-Survey-2019.pdf

2   William Whyte, *Somewhere to live: Why British students study away from home – and why it matters*, 2019 https://www.hepi.ac.uk/wp-content/uploads/2019/11/HEPI_Somewhere-to-live_Report-121-FINAL.pdf

3   Tim Blackman, *What affects how much students learn?* HEPI Policy Note 5, 2018 https://www.hepi.ac.uk/wp-content/uploads/2018/01/HEPI-Policy-Note-5-What-affects-how-much-students-learn08_01_17.pdf