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The Clinical Outcomes in Routine Evaluation Short Form B (CORE SFB): Norms for an Irish Institute of Technology Student Sample

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A study of student mental health was conducted in an Irish university level college prior to the Covid-19 pandemic. The study had two principal objectives. The first was to provide a baseline examination of student mental health. The second was to explore the utility of several self-report mental health measures that had not previously been administered in an Irish population. This paper examines student mental health using one of these measures, the Clinical Outcomes in Routine Evaluation Short Form B (CORE SFB). Results from the achieved sample of 763 students are explored. Females self-reported significantly higher levels of mental distress on two of the CORE SFB subscales (the Wellbeing and Problems subscales) as well as on the Mean Total Score (MTS). Males were significantly more likely to endorse an item exploring threatening behaviour towards others. Final year students were also significantly more likely to self-report higher levels of mental distress on the Wellbeing, Problems and Functioning subscales, as well as on the MTS. Internal and test-retest reliability indicated support for the CORE SFB. Examination of the CORE SFB alongside the Mental Health Index (MHI) and the Brief Symptom Inventory (BSI 18) indicated convergent validity for this measure. Preliminary empirical percentile scores for the CORE SFB subscales and the total score were developed.

INTRODUCTION

Rates of mental disorders have been found to reach a peak in young adults, following a growing increase from childhood and through adolescence [1]. Recent studies have reported a gradual increase in the absolute rate of psychiatric disorders and mental health issues in young people [2-3]. From adolescence onwards significant differences in mental health are evident between males and females [4]. This is particularly evident in conditions such as depression where a recurrent finding is that females have a 1.5 – 3 times higher prevalence rate than males [4-6]. Although evidence of gender differences in depression has been noted among adolescents in Ireland [7-9], it is notable that an examination of gender differences in depression in 25 European countries identified that not only did Ireland have the lowest difference in the prevalence of depression on the basis of gender, but that the difference observed was not statistically significant [10]. Going to college represents a time of transition

and change for many students. Although this can be a positive experience [11-12], it is not without its stresses [13-14]. However, there is some evidence that academic stressors are particularly significant [11], and that these have a particularly adverse impact on students in their final year [15-16]. Several studies have noted that student populations suffer significantly worse psychological ill-health than the mainstream population [17-25].

The UK Royal College of Psychiatrists [26] has warned that rates of psychiatric illness amongst students at third level will increase in the future [27]. The reasons for this projected increase include widening levels of participation, combined with related stresses of third-level study, such as financial worries, increased aspirations, the impact of exams, and increased pressure to achieve a good result in their studies [28]. The RCP also noted the detrimental impact of increasingly impersonal and bureaucratic academic institutions on students [26]. The dominance of academic stressors, over other sources of stress has been noted in Irish students in a number of research studies [11,29].

The achievement of equity of access to education, including third level education has been noted as a priority of the Higher Education Authority in Ireland [30]. This approach has increased access to third level education for people from more diverse backgrounds and with higher levels of need. To give an example of this diversity, a study conducted by the Association for Higher Education Access & Disability noted a five-fold increase in the participation rate of students with disabilities in the Institute of Technology sector between 1993/94 and 2004/05 [31]. However, the Higher Education Authority have also noted that the lowest rates of progression are among students from lower socio-economic groups [32].

Most Institutes of Technology in Ireland offer a range of possible programs ranging from apprenticeships to PhDs. The Institutes of Technology also focus on providing a 'ladder' system, whereby students can register for a one or two year course initially and then 'top-up' their qualification by ading on extra years and thus eventually achieving a higher terminal qualification. The Institute of Technology sector in Ireland has a broader socio-economic base than the University sector and has a higher proportion of first generation to college students. The majority of the Institutes of Technology in Ireland have recently merged with partners to form five Technological Universities [33].

Historically assessments of the mental and physical health of students in Ireland have been relatively rare [11, 9,34,35]. From a Public Health perspective it is interesting to note that with a small number of exceptions [21,36,37], the majority of the research examining student health conducted in Ireland in the past focussed on students from the traditional universities, rather than students of the Institutes of Technology [38-43]. This privileged focus no doubt in part reflected the higher socio-economic status of the students at these more prestigious educational institutions. However, more recent research on student health has focused on both sectors of the Irish higher education landscape, particularly in the wake of the Covid-19 pandemic [25,44].

This current study set out to explore mental health among students in an Institute of Technology and to explore the utility of the Clinical Outcomes in Routine Evaluation Short Form B (CORE SFB) among such a population [45].

METHODOLOGY

Ethics

Ethical approval for this study was given by the Institutional Research Ethics Committee. However, given the sensitivity of the topic oversight of the project throughout was conducted by the College Student Counselling Service.

Procedure

A total of 1,000 questionnaires were distributed and completed during lectures. A quota sampling frame was utilised to achieve a representative sample of the various Schools in the College, course years, and an even gender split. Participants were asked not to put their names or student identity numbers on the survey forms.

Participants were assured that all information collected would be treated in a confidential manner. All participants were assured that their participa-

tion was entirely voluntary and that they had the right to not participate in this study. Given that the CORE SFB asks a number of sensitive questions, the final element of the questionnaire form included details on accessing the College Student Counselling Service.

Although the questionnaires were anonymous, one lecture group (n=60) was opportunistically selected to take part in a test- retest examination of the CORE SFB. At the initial administration respondents were asked to produce an anonymous proxy unique identifier. This involved writing their number of male siblings, number of female siblings, favourite colour, favourite animal, and favourite television programme on the questionnaire. One month later the same CORE SFB measure was re-administered and respondents were once again asked to include the same information to facilitate linking the data. This linkage was completed by hand. However, this procedure was hampered by poor attendance at the administration periods, and it was only possible to link data on 28 participants.

Materials

The survey included a short battery of measures including the five-item Mental Health Index from the Rand Corporation's SF-36 [Version 1] [50], the Brief Symptom Inventory 18 (BSI 18) [51], the Clinical Outcomes in Routine Evaluation Short Form-B (CORE-SFB) [45,52], as well as a brief section on tobacco, alcohol and drug use [53-55]. This paper focuses on the results of the CORE-SFB.

The CORE SFB is part of the CORE (Clinical Outcomes in Routine Evaluation) system which was designed to facilitate monitoring and promote an examination of outcomes in therapy. Uptake of the CORE system has been significant across the UK. This has in part been aided by its fee-free nature [56]. The CORE team also suggest that the success of the CORE also rests in its development in consultation with users [57] and the focus on training, networks, PC based software, web access and support available for the CORE measures [52].

The CORE SFB is a subset of 18 items from the 34 item CORE - Outcomes Measure (CORE-OM), a client self-report form which is designed to be completed at initiation and termination of therapy. The CORE-OM has been used extensively and successfully in a variety of settings, including mental health settings [58], primary care [59], and secondary care settings [60], with older populations [61], as well as in general population settings [3]. The CORE-OM has also been used extensively within university counselling services in the UK [3,27,28].

The CORE-OM has been found to be acceptable, valid, reliable and sensitive to change [56]. In relation to depression evidence suggests that the CORE-OM is supported by the convergent validity of the Beck Depression Inventory II [62,63], as well as with the Clinical Interview Schedule (CIS) [10]. On a similar issue, Gilbody et al. found the performance of the self-rated CORE-OM to be as good as clinician-administered instruments in detecting depression in primary care settings in the UK [64]. The psychometric properties of the CORE-OM have been explored in-depth [56,65]. It should be noted that Lyne et al. have noted the complex factor structure of the CORE-OM [66]. Ashworth et al. have also noted the limitations of the CORE-OM in exploring idiographic issues such as work and relational issues [67].

There is a dearth of literature on the CORE SFB, however it was chosen over the CORE-OM because of its brevity. It was imperative that administration of the full battery of questionnaires alongside an explanation of the study and its aims took no longer than a standard one hour lecture session. The CORE SFB, similar to the CORE-OM, includes four subscales (Wellbeing, Problems, Functioning, and Risk), as well as yielding a mean total score (MTS). The CORE SFB was adopted in preference to the CORE Short Form A (CORE SFA) as it includes a question on suicidal ideation. Given the relatively high rates of suicide in Ireland, particularly among young males, this question was felt to be extremely important [25,68-71].

Similar to the other versions of the CORE measures, respondents of the CORE SFB are asked to read each statement and think how often they have felt that way over the last week. The 18 item CORE SFB helps overcome the response-tick issue by incorporating 13 negatively worded items and five positively worded items. Answers to all questions are via a five point likert scale (scored 0 to 4): Not at all;

Only Occasionally; Sometimes; Often; Most or all the time. Table 1 details the items contained in each of the four CORE SFB subscales (Table 1).

TABLE 1. The Four Elements Of The CORE SFB

CORE SFB INDEX ITEM NO	CORE SFB INDEX ITEM
	WELLBEING SUBSCALE
3	I have felt optimistic about my future
9	I have felt OK about myself
12	I have felt overwhelmed by my problems
14	I have felt like crying
	PROBLEMS SUBSCALE
2	I have difficulty getting to sleep or staying asleep
4	I have felt totally lacking in energy and enthusiasm
6	I have been troubled by aches, pains or other physical problems
10	Tension and anxiety have prevented me doing important things
11	I have been disturbed by unwanted thoughts and feelings
18	I have thought I am to blame for my problems and difficulties
	FUNCTIONING SUBSCALE
1	I have felt terribly alone and isolated
7	I have been happy with the things I have done
8	Talking to people has felt too much for me
13	I have felt I have someone to turn to for support when needed
16	I have been able to do most things I needed to
17	I have thought I have no friends
	RISK SUBSCALE
5	I have made plans to end my life
15	I have threatened or intimidated another person

Participants

Based on the total enrolment at the Institute of Technology involved, and adopting a confidence level of 99%, with a 5% margin of error, a sample size of 608 was calculated as the required sample size. Data was collected from a total of 763 participants, yielding a response rate of 76%. These participants ranged in age from 17 to 63 years of age. The mean age was 22.2 years (SD=5.65), while the median age was 20. 75.2% (565) of participants were aged under 23. Of the 742 participants that gave their gender, 52% were male (386) and 48% (356) were female.

Participants were engaged in a range of courses varying from PhD to apprenticeship level, although the majority were enrolled on ordinary and honours degrees. No measure of socio-economic status was included in this study. However, it is known that students generally come from more affluent families in society [46,47]. It must be acknowledged though that Institutes of Technology have traditionally been accessed by a more representative cross-sample than the traditional University sector, and have notably higher representation from the children of both unskilled and skilled manual workers [16,48,49].

Statistical Analysis

Analysis involving t-tests, correlations, chi-square, chronbach alpha reliability, and factor analysis was conducted using SPSS. Given the robustness of the statistics involved parametric analysis was conducted [72]. In line with Perneger's recommendation Bonferroni corrections were not adopted [73].

RESULTS

Table 2 details mean CORE SFB total and subscale scores broken down by gender. Lower scores indicate better mental health status, and it is clear from Table Five that with the exception of the Risk subscale, males have lower CORE SFB scores.

Analysis comparing first year students against all other students revealed significantly better self-reported mental health in first year students across the MTS and on two of the four CORE SFB subscales (MTS $t(665) = -3.50$, $p < .001$; Wellbeing $t(484) = -3.57$, $p < .001$;

Problems $t(663) = -4.04$, $p < .001$). No significant differences were noted between first year students and other year students on the Risk subscale ($t(662) = 0.53$, $p = .597$), although the more positive self- reports of first year students on the

Functioning subscale was of borderline significance t(665) = -1.96, p = .051). Analysis comparing final year students and non-final year students revealed significantly worse self-reported mental health in final year students across the MTS and three of the four CORE SFB subscales (MTS t(347) = 3.52, p < .001; Wellbeing t(337) = 2.79, p = .006; Problems t(743) = 2.95, p = .003; Functioning t(745) = 3.40, p = .001).

The Risk Items

Table 3 details results of the two risk items, focusing on the results of the suicidal ideation question and the interpersonal threat question

An independent samples t-test identified no significant difference between males and females on the suicidal ideation item (t(624) = -1.68, p = .093). However, a similar test identified a significant difference between males and females on the interpersonal threat item, with men being more likely to endorse this item (t(695) = 3.36, p = .001). No significant difference was noted final year students and non-final year students on the Risk subscale (t(325) = 1.13, p = .260).

CORE SFB Reliability & Validity

Table 4 details the internal reliability of CORE SFB subscales and summative measures. The MTS demonstrated adequate reliability (> .07) [74]. Results for the subscales reflect the small number of items. This is most apparent in the Risk subscale, which has just two items, as well as measuring two quite different issues.

The CORE SFB was readministered to one group of participants 4 weeks after the initial survey to investigate the test-retest reliability of this measure.

TABLE 2. Mean (SD) (CI) CORE SFB Scores by Gender and Year of Study

CORE SFB SUBSCALES	TOTAL	MALES	FEMALES	FIRST YEAR STUDENTS	MIDDLE YEARS STUDENTS	FINAL YEAR STUDENTS
Wellbeing	1.20 (.76) (1.14-1.25) N= 759	0.99 (.70) (0.92-1.06) N=384	1.41 (.77) (1.33-1.49) N=354	1.03 (.66) (0.95-1.12) N=204	1.19 (.76) (1.09-1.28) N=256	1.33 (.84) (1.21-1.44) N=211
Problems	1.09 (.79) (1.03-1.15) N=759	0.98 (.79) (0.90-1.06) N=384	1.22 (.76) (1.14-1.30) N=354	0.90 (.74) (0.80-1.00) N=203	1.11 (.80) (1.02-1.21) N=256	1.23 (.81) (1.11-1.36) N=210
Functioning	0.88 (.66) (0.84-0.93) N=760	0.87 (.65) (0.81-0.94) N=384	0.91 (.66) (0.84-0.98) N=355	0.83 (.62) (0.75-0.92) N=204	0.88 (.65) (0.80-0.96) N=256	(.69) (0.92-1.11) N=211
Risk	0.24 (.51) (0.20-0.28) N= 757	0.28 (.53) (0.22-0.33) N=384	0.21 (.49) (0.15-0.26) N=352	0.26 (.52) (0.19-0.33) N=203	0.21 (.48) (0.15-0.27) N=256	0.28 (.59) (0.20-0.36) N=211
Mean Total Score (MTS)	0.95 (.58) (0.91-0.99) N=760	0.87 (.56) (0.81-0.93) N=384	1.05 (.58) (0.99-1.11) N=355	0.84 (.54) (0.76-0.91) N=204	0.95 (.57) (0.88-1.02) N=256	1.07 (.62) (0.99-1.16) N=211

TABLE 3. Risk to Self and Others Items by Gender

ITEM 5- SUICIDAL IDEATION (OVER THE PAST WEEK: I MADE PLANS TO END MY LIFE)					
Gender	**Not at all**	**Only Occasionally**	**Sometimes**	**Often**	**Most or all of the time**
Both	93.2% (695)	3.9% (29)	1.6% (12)	0.7% (5)	0.7% (5)
Male	94.2% (357)	3.7% (14)	1.3% (5)	0.5% (2)	0.3% (1)
Female	91.6% (318)	4.3% (15)	2.0% (7)	0.9% (3)	1.2% (4)
ITEM 15- INTERPERSONAL THREAT (OVER THE PAST WEEK: I HAVE THREATENED OR INTIMIDATED ANOTHER PERSON)					
Gender	**Not at all**	**Only Occasionally**	**Sometimes**	**Often**	**Most or all of the time**
Both	78.1% (590)	12.3% (93)	6.4% (48)	1.6% (12)	1.6% (12)
Male	74.3% (284)	12.8% (49)	8.4% (32)	2.1% (8)	2.4% (4)
Female	82.1% (289)	12.2% (43)	4.3% (15)	0.6% (2)	0.9% (3)

Results of the test-retest administration among 28 participants who took part in this element of the study are also given in Table 4.

TABLE 4. Internal Reliability and Test-Retest Reliability of the CORE SFB

CORE SFB SUBSCALES & TOTALS	CHRONBACH ALPHA RELIABILITY	TEST-RETEST (R=)
Wellbeing	.567	.402 * p= .034
Problems	.761	.425 * p= .024
Functioning	.660	.407 * p= .031
Risk	.281	.731 * p< .001
MTS	.849	.484 * p= .009

Subscale Correlations and Convergent Validity of the CORE SFB

Table 5 details Pearson's correlation coefficients between CORE SFB scores and three other measures of mental health. These include the Brief Symptom Inventory 18 subscale and Global Severity Index (GSI) scores, and the Mental Health Index (MHI). Similar to the CORE SFB positive mental health is indicated by lower scores on the BSI 18, but by higher scores on the MHI.

Although the correlations between the CORE SFB Risk subscale and the other BSI and MHI measures is slight, overall the results indicate convergent validity of the CORE SFB. In this regard, the correlations between the CORE SFB MTS score and the BSI 18 GSI and the MHI are notable (.610 and -.730 respectively).

Table 5 also details Pearson's correlation coefficients between each of the CORE SFB subscales and the MTS. It is clear that the Risk subscale score is significantly, but only modestly, correlated with the other three subscales.

Factor Structure of the CORE SFB

Exploratory factor analysis using principal components analysis with Promax rotation and Kaiser normalisation was used to explore components of the CORE SFB. Four components were identified. Details of the factor loadings of each question are given in Table 6.

TABLE 6. Item Loading on Factors in the CORE SFB

ITEM NO.	CORE SFB Items	Factor Loading
	Subjective Distress	
1	I have felt terribly alone and isolated	.719
8	Talking to people has felt too much for me	.664
10	Tension and anxiety have prevented me doing important things	.668
11	I have been disturbed by unwanted thoughts and feelings	.705
17	I have thought I have no friends	.699
18	I have thought I am to blame for my problems and difficulties	.687
	Depression	
2	I have difficulty getting to sleep or staying asleep	.704
4	I have felt totally lacking in energy and enthusiasm	.626
6	I have been troubled by aches, pains or other physical problems	.597
12	I have felt overwhelmed by my problems	.701
14	I have felt like crying	.673
	Wellbeing	
3	I have felt optimistic about my future	.624
7	I have been happy with the things I have done	.793
9	I have felt okay about myself	.734
13	I have felt I have someone to turn to for support when needed	.572
16	I have been able to do most things I needed to	.691
	Risk	
5	I made plans to end my life	.630
15	I have threatened or intimidated another person	.767

The combined variance of these factors was 52.66%.

TABLE 5. Convergent Validity and Subscale Correlations for the CORE SFB

	WELL-BEING	PROB-LEMS	FUNC-TION-ING	RISK	MTS	BSI 18 SOM.	BSI DEP.	BSI 18 ANX.	BSI 18 GSI	MHI
Well-being	1.000 (759)	.606 (758)*	.612 (759)*	.246 (757)*	.825 (759)*	.416 (747)*	.627 (748)*	.551 (748)*	.610 (746)*	-.627 (751)*
Problems		1.000 (759)	.537 (759)*	.346 (757)*	.870 (758)*	.610 (747)*	.653 (748)*	.688 (748)*	.744 (746)*	-.631 (751)*
Functioning			1.000 (760)	.313 (757)*	.832 (760)*	.373 (747)*	.624 (748)*	.504 (748)*	.573 (746)*	-.619 (751)*
Risk				1.000 (757)	.447 (757)*	.360 (746)*	.350 (747)*	.311 (747)*	.388 (745)*	-.226 (750)*
MTS					1.000 (760)	.416 (747)*	.627 (748)*	.551 (748)*	.610 (746)*	-.730 (751)*

TABLE 7. Empirical Percentiles for the CORE SFB Subscales by Gender

SCORE	SUBSCALES							
	Wellbeing		Problems		Functioning		Risk	
	Male	Female	Male	Female	Male	Female	Male	Female
0	8.0% (31)	2.2% (8)	9.6% (37)	2.8% (10)	8.0% (31)	8.4% (30)	71.5% (276)	77.5% (276)
1	18.9% (42)	8.1% (21)	18.1% (33)	9.0% (22)	17.1% (35)	17.7% (33)	86.0% (56)	90.4% (46)
2	34.7% (61)	17.7% (34)	27.2% (35)	16.3% (26)	30.1% (50)	27.8% (36)	93.5% (29)	95.8% (19)
3	50.8% (62)	28.7% (39)	38.3% (43)	22.5% (22)	39.1% (35)	38.5% (38)	96.6% (12)	97.5% (6)
4	63.7% (50)	40.2% (41)	46.9% (33)	33.0% (37)	50.3% (43)	47.2% (31)	99.2% (10)	99.4% (7)
5	74.9% (43)	52.5% (44)	55.2% (32)	42.0% (32)	60.1% (38)	57.9% (38)	99.5% (1)	-
6	82.4% (29)	65.4% (46)	63.0% (30)	50.1% (29)	70.2% (39)	65.7% (28)	100% (2)	-
7	89.1% (26)	73.9% (30)	67.9% (19)	58.3% (29)	75.4% (20)	74.4% (31)		99.7% (1)
8	94.0% (19)	81.7% (28)	75.6% (30)	63.7% (19)	80.8% (21)	77.5% (11)		100% (1)
9	95.9% (7)	87.1% (19)	80.1% (17)	69.6% (21)	86.5% (22)	83.1% (20)		
10	97.4% (6)	93.0% (21)	84.2% (16)	76.3% (24)	89.6% (12)	89.6% (23)		
11	97.9% (2)	96.9% (14)	86.8% (10)	81.1% (17)	92.5% (11)	92.4% (10)		
12	99.2% (5)	98.0% (4)	90.2% (13)	85.4% (15)	95.3% (11)	95.5% (11)		
13	99.7% (2)	99.2% (4)	92.7% (10)	89.0% (13)	96.1% (3)	96.9% (5)		
14	-	99.4% (1)	94.3% (6)	91.5% (9)	96.6% (2)	97.2% (1)		
15	-	100% (2)	95.6% (5)	95.5% (14)	98.4% (7)	98.6% (5)		
16	100% (1)		96.4% (3)	96.9% (5)	99.2% (3)	98.9% (1)		
17			97.7% (5)	98.3% (5)	99.5% (1)	99.4% (2)		
18			98.7% (4)	98.6% (1)	100% (2)	99.7% (1)		
19			99.0% (1)	98.9% (1)		-		
20			99.2% (1)	99.2% (1)		-		
21			99.7% (2)	99.7% (2)		100% (1)		
22			-	100% (1)				
23			-					
24			100% (1)					
N	**N= 386**	**N= 356**	**N= 386**	**N= 355**	**N= 386**	**N= 356**	**N= 386**	**N= 356**

The first factor, which may be termed Subjective Distress, accounted for 30.39% of the variance, while the second factor, Depression, accounted for 10.49%. The third factor, Wellbeing, accounted for 6.21% of the variance, while Risk, the fourth factor, accounted for 5.61%. Tables 7 and 8 detail the percentile scores for the CORE SFB subscales, and total scores.

DISCUSSION

Comparisons with both the BSI 18 and the MHI indicate that the CORE SFB is a valid measure of mental health in this sample of Irish Institute of Technology students. Test-retest reliability and internal reliability were also found to be acceptable, increasing confidence in the CORE SFB.

The quota sampling methodology combined with the high response rate achieved in this study greatly enhances confidence in the generalisability of these findings across Irish third-level students. Consistent with the mental health literature, females reported significantly more symptoms than males on the Wellbeing and Problems subscales, and on the MTS. It remains unclear whether females simply experience higher levels of distress or rather are simply more willing to concede, in self-report studies, the presence of such distress. It is possible that even in anonymous surveys males may feel a gendered prohibition against admitting such feelings, which might be viewed as a "weakness", or they be unable to acknowledge such weakness even to themselves. Further research might usefully explore the level of help seeking performed by male students in distress and compare this with female students reporting similar levels of distress. A phenomenological approach might be most suitable to explore this issue in depth.

The mental health of final year students is a significant issue given these students recorded sig-

TABLE 8. Empirical Percentile Scores for the CORE SFB MTS by Gender

	CORE SFB MTS				
Score	**Male**	**Female**	**Score**	**Male**	**Female**
0	0.8% (3)	0.3% (1)	26	88.1% (9)	78.1% (10)
1	1.8% (4)	0.6% (1)	27	89.1% (4)	78.7% (2)
2	4.4% (10)	1.7% (4)	28	90.4% (5)	81.2% (9)
3	6.5% (8)	2.8% (4)	29	90.9% (2)	82.6% (5)
4	9.3% (11)	4.8% (7)	30	91.7% (3)	84.6% (7)
5	13.7% (17)	6.5% (6)	31	92.2% (2)	87.4% (10)
6	17.4% (14)	10.1% (13)	32	93.5% (5)	88.8% (5)
7	22.0% (18)	12.6% (9)	33	94.0% (2)	89.6% (3)
8	28.5% (25)	16.9% (15)	34	95.3% (5)	92.1% (9)
9	32.1% (14)	20.8% (14)	35	96.1% (3)	93.0% (3)
10	38.3% (24)	23.9% (11)	36	96.6% (2)	94.1% (4)
11	40.9% (10)	30.6% (24)	37	96.9% (1)	95.2% (4)
12	46.6% (22)	34.8% (15)	38	-	96.6% (5)
13	49.5% (11)	39.0% (15)	39	97.2% (1)	97.2% (2)
14	53.9% (17)	43.0% (14)	40	-	97.5% (1)
15	57.8% (15)	45.8% (10)	41	97.4% (1)	-
16	60.6% (11)	50.3% (16)	42	-	97.8% (1)
17	63.5% (11)	53.9% (13)	43	-	98.3% (2)
18	66.1% (10)	56.5% (9)	44	97.9% (2)	-
19	69.4% (13)	58.4% (7)	45	98.2% (1)	-
20	73.8% (17)	62.4% (14)	46	98.4% (1)	98.6% (1)
21	78.0% (16)	64.6% (8)	47	98.7% (1)	98.9% (1)
22	79.5% (6)	66.3% (6)	48	99.0% (1)	-
23	82.1% (10)	69.7% (12)	49	-	-
24	84.2% (8)	72.5% (10)	50	99.5% (2)	99.2% (1)
25	85.8% (6)	75.3% (10)	51	99.7% (1)	99.7% (2)
			52-58	-	-
			59	-	100% (1)
			60	100% (1)	
				N= 386	**N= 356**

nificantly worse health on three of the four CORE SFB subscales and the MTS when compared with students in other years. Given that the data for this study was collected between October and January in a College which is not semesterised (i.e. the most important exams are still held towards the end of the academic year in May), it seems probable that rates of reported distress may rise above those recorded here preceding and during exam periods. Follow-up investigation might illuminate how these rates fluctuate throughout academic years with a particular focus on patterns during the final exam year. Tailored support packages for students in different college years may be warranted, with a particular focus on the provision of additional supports for final year students.

It remains a significant challenge to services within third level colleges as to how to effectively support students during their College experience. An ongoing issue is that of the stigmatisation of mental health issues and help-seeking [75]. One potential intervention developing an emerging following is that of 'Mindfulness'. Based on Eastern meditative practices, such interventions may be delivered in a group setting. Mindfulness has been shown to be effective in the treatment of depression and prevention of relapse in depression [77]. Current NICE guidelines recognise mindfulness for the treatment of adult depression, and it is endorsed by both the British Psychological Society and the Royal College of Psychiatrists [78].

The normative data provided here may be use-

ful for screening and to facilitate comparison with clinical samples. However, it is hoped that further research might usefully be conducted examining other scales in the CORE suite. An examination of the CORE-OM would appear appropriate given the utility of the CORE SFB observed in this project. Such a project might both facilitate the adoption of routine evaluation in college counselling services, and support the adoption of a standardised measure across services.

Although the results presented here are given, in part at least, as normative data for Institute of Technology (IoT)/ Technological University (TU) students, it must be acknowledged that all data was collected from just one IoT. Further research across a number of IoTs/TUs is suggested, as well as a similarly enhanced study across the University sector. In addition although a good response rate was achieved, it must be noted that as questionnaires were distributed in lectures it is probable that the results may under-estimate actual levels of mental distress. Students suffering acute or prolonged distress are likely to have lower attendance rates at lectures than other students. In addition, since surveys were completed in lecture halls some students may have felt their responses were potentially visible to others, which may have introduced an element of social desirability bias. It is also unfortunate that this study did not include a follow-up involving clinical interviews. Such interviews would have facilitated an examination of the sensitivity and specificity of the CORE SFB. However, any such follow-up element would undoubtedly have resulted in a lower, and hence not as representative, response rate, as well as potentially biasing results. In addition, the administration of multiple measures of mental health in the same session may have influenced the results noted in this survey. It is possible that this may have focussed attention on symptoms to a higher degree than in other studies, possibly resulting in a higher level of identification and endorsement. Alternatively it might have led to boredom and potential disinterest in reporting.

Overall the findings of this study outline preliminary empirical percentile scores for the CORE SFB and its subscales in an Irish student population, as well as detail on validity and reliability. The results also clearly indicate higher rates of mental distress among females and final year students. It is hoped that this will help facilitate increased resources becoming available to support students. It is an issue of concern that this research found that males were significantly more likely to endorse an item exploring threatening behaviour towards others on the CORE SFB. Further research on student mental health and support interventions is recommended.

RESUMO

Studo pri mensa sano de studento estis farita en irlanda universitatnivela kolegio antaŭ la Covid-19-pandemio. La studo havis du ĉefajn celojn. La unua estis disponigi bazlinian ekzamenon de studenta menshigieno. La dua estis esplori la utilecon de pluraj mem-raportaj menshiginoj, kiuj antaŭe ne estis administritaj en irlanda loĝantaro. Ĉi tiu artikolo ekzamenas mensan sanon de studento uzante unu el ĉi tiuj mezuroj, la Klinikaj Rezultoj en Rutina Evaluado Mallonga Formo B (CORE SFB). Rezultoj de la atingita specimeno de 763 studentoj estas esploritaj. Inoj mem-raportis signife pli altajn nivelojn de mensa aflikto sur du el la CORE SFB-subskaloj (la Wellbeing kaj Problems-subskaloj) same kiel sur la Meza Totala Poentaro (MTS). Maskloj estis signife pli verŝajne aprobi objekton esplorantan minacan konduton al aliaj. Finjaraj studentoj ankaŭ estis signife pli verŝajnaj mem-raporti pli altajn nivelojn de mensa aflikto sur la Bonfarto, Problemoj kaj Funkciaj subskaloj, same kiel sur la MTS. Interna kaj test-retesta fidindeco indikis subtenon por la CORE SFB. Ekzameno de la CORE SFB kune kun la Mensa Sano-Indekso (MHI) kaj la Mallonga Simptoma Inventaro (BSI 18) indikis konverĝan validecon por ĉi tiu mezuro. Preparaj empiriaj percentilpoentaroj por la CORE SFB-subskaloj kaj la sumpoentaro estis evoluigitaj.

Conflict of Interest

The authors of this article declare that there is no conflict of interest.

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