

# **Short Report**

# A feasibility study on a novel well-being intervention for university students

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#### **Abstract**

**Objectives:** Challenging transitions, increased stress and mental ill health can affect students' academic performance and their capacity to remain in higher education. Prevention and early treatment of mental health problems in college students is therefore a key public health priority, nationally and internationally. Developing a range of evidence-based interventions targeting the mental health of students is critical. We examined the feasibility and acceptability of a new universal time use and well-being intervention, the 'Everyday Matters: Healthy Habits for University Life' digital badge (EMDB), a co-curricular micro-credential for first-year college students.

**Methods:** This study used a single-arm, pre-post design for first-year undergraduate students. The EMDB comprised eight 1-hour lunchtime sessions on brain development and time-use habits across the 24 hours of the day including sleep, self-care, leisure, study and work. Validated measures of occupational competence and value, mental well-being, sleep health, mindset, self-compassion and gratitude were completed, along with an evaluation questionnaire.

Results: Eight first-year undergraduate students completed the demographic questionnaire and pre- and post- measures, with one additional student completing only the evaluation questionnaire. There was significantly improved levels of well-being, self-compassion and growth mindset following the intervention. Many of the challenges reported by participants related to occupational issues such as managing finances and having a satisfying routine. Participants appreciated the practical relevance and scientific underpinnings of the programme content. The sense of belonging within the group and having insightful conversations with other group members were particularly valued by participants.

**Conclusions:** This study offers preliminary evidence that an occupational therapy based universal time-use and well-being intervention was feasible to deliver and acceptable to first-year undergraduate students. The results of this study and the participant acceptability support further development and evaluation of the EMDB intervention.

Keywords: Feasibility study; mental health; occupational therapy; student health services; transitions

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## Introduction

Increased levels of student mental ill health, mental distress and low well-being have been reported nationally and internationally (Auerbach *et al.* 2018; Higher Education Authority, 2020). The transition into and through higher education is challenging for many students (Harris, 2019; Keptner, 2019). College was the most frequently reported stressor for young adults in the *My World 2 Survey* (Dooley *et al.* 2019). Challenging transitions, increased stress and mental ill health can affect students' academic performance and their desire and capacity to remain in higher education (Duffy *et al.* 2019).

Prevention and early treatment of mental health problems in college students is therefore a key public health priority (Cuijpers *et al.* 2019). Mental health promotion, prevention and

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treatment in higher education are mainly facilitated through one-to-one counselling services (Brown, 2018). However, there are significant pressures on these services, with demand exceeding supply, even though stigma around accessing mental health supports remains (Price & Smith, 2019). Developing and resourcing a range of evidence-based interventions targeting the mental health, well-being and success of students is critical (Hudziak & Tiemeier, 2017; Hill et al. 2020; Worsley et al. 2020; Long et al. 2021) along the continuum of support from universal to intensive supports (Department of Health, 2020). Given that the curriculum is the only guaranteed point of contact between a university and its students (Hughes, 2020), curricular approaches to well-being, although complex (Ecclestone, 2019), should be considered (Houghton & Anderson, 2017).

What people do every day, their time use habits and routines, impacts health and well-being and often changes significantly during times of transition (Gewurtz *et al.* 2016). Risks to health can arise from a lack of fit, through choice or circumstance, between daily routines and the environment in which people work, rest and play (Wilcock, 1998). As both quantities and qualities of time use shape activity patterns (Hunt *et al.* 2015), optimising patterns of everyday

activities requires a good fit between the ability to participate in meaningful and necessary activities across the day and the importance of these everyday activities to the individual. Occupational strategies that facilitate successful engagement in daily activities and psychological strategies for altering patterns of thoughts and behaviours can both support successful transition (Crider *et al.* 2015).

We report a feasibility study of a new universal time use and well-being intervention, developed by the first author. The 'Everyday Matters: Healthy Habits for University Life' digital badge (EMDB) is a co-curricular micro-credential designed for first-year college students at University College Cork (UCC). With the goals of supporting first-year college students, increasing their preparedness for college life and their chances of study success, participants in the EMDB are encouraged to explore some practical everyday things that they can say and do to support themselves as much as possible during this time of change and establish healthy habits and routines for their university lifestyle, enhancing their successful transition into and through higher education. The EMDB is underpinned by scientific research and theory in occupational science and occupational therapy, positive psychology and developmental neuroscience.

The main objectives of this study were to investigate the following questions:

- 1. What are participants' perceived occupational competence (i.e. ability to participate in everyday activities) and occupational value (i.e. perceived importance of everyday activities) before and after the EMDB?
- 2. Are there differences in participants' mental well-being, sleep health, mindset, self-compassion and gratitude before and after the EMDB?
- 3. What are participants' perspectives on the EMDB?

## **Methods**

# Design

This study used a single-arm (Evans, 2010), pre–post design (Salkind, 2010) to explore the feasibility and acceptability of the EMDB.

# **Participants**

The target population for the first delivery of the EMDB was first-year students from the College of Arts, Celtic Studies and Social Sciences, UCC. Information about the EMDB was made available to these students through various university digital communication channels. Thirty places were offered on a first come first served basis. Actual attendance subsequently ranged from 10 to 14 students (average weekly attendance: 11). At the first session, participants of the EMDB were invited to participate in the feasibility study. Eight students completed the demographic questionnaire and pre- and post- measures, with one additional student completing the evaluation/feedback questionnaire only.

# Intervention

Over eight 1-hour lunchtime sessions and using a range of teaching and learning strategies and resources, students were guided to reflect on their own time-use habits across the 24 hours of their day including sleep, self-care, play and leisure, study and work and how these influenced their health and well-being (Hunt et al. 2015; Moll et al. 2015). Habits of mind including growth mindset, self-compassion and joy and gratitude were also explored, as their presence or absence can enrich or undermine daily experiences and occupational competence. Participants learned about

brain and body health and how to create and maintain daily habits and routines that support physical and emotional well-being for learning and life (Hunt, 2020). A comprehensive online companion resource hosted on the university's virtual learning environment supplemented the in-person sessions. The EMDB was delivered in-person by the first author in the UCC Skills Centre, the university's academic support centre located in the main library. The intervention was delivered in semester one 2019–2020 before the onset of the COVID-19 pandemic.

#### Main outcome measures

The first research question was investigated as follows:

# Occupational Self-Assessment - Short Form

Developed and validated by Popova *et al.* (2019), the Occupational Self-Assessment – Short Form (OSA-SF) is a three-step assessment of the ability to successfully perform (occupational competence) (OSA\_C) and the perceived importance (occupational value) (OSA\_V) of 12 daily activities; it also identifies up to four priorities to target for improvement. Competence sub-scale and value subscale items are summed.

The following validated measures were chosen to investigate research question two:

# Warwick-Edinburgh Mental Well-being Scale

Warwick–Edinburgh mental well-being scale (WEMWBS) has been validated for the measurement of mental well-being amongst the general population (Tennant *et al.* 2007). It comprises 14 positively worded statements with five response categories ranging from 'none of the time' to 'all of the time'.

# RU\_SATED Questionnaire (v2.0)

The RU\_SATED scale (Ravyts et al. 2021) assesses six key dimensions of sleep that have been consistently associated with health outcomes. These dimensions are regularity of sleep; satisfaction with sleep; alertness during waking hours; timing of sleep; sleep efficiency and sleep duration. Items are each rated on a 3-point Likert scale from 0 (Rarely/Never) to 2 (Usually/Always) and totalled, with higher scores indicating better sleep health.

# Revised Implicit Theories of Intelligence (Self-Theory) Scale

The Revised Implicit Theories of Intelligence (Self-Theory) Scale (RITIS; De Castella & Byrne, 2015) explores students' beliefs about their personal ability to change their intelligence level. It comprises eight statements, each of which reflects a first-person claim about the extent to which intelligence is fixed or malleable, with responses on a 6-point scale from strongly disagree to strongly agree. Lower total scores indicate a stronger growth mindset. The RITIS shows good construct validity (De Castella & Byrne, 2015).

# Self-Compassion Scale - Short Form

The 12-item Self-Compassion Scale – Short Form (SCS–SF; Neff, 2011) offers an economical alternative to the long self-compassion scale to measure self-compassion. The SCS-SF has been validated for use by Raes *et al.* (2011). Items are rated on a five-point response scale ranging from 1 (almost never) to 5 (almost always), yielding a total score with higher values indicating higher self-compassion.

# The Gratitude Questionnaire-6

The GQ-6 is a six-item self-report questionnaire designed to assess individual differences in the proneness to experience gratitude in

**Table 1.** Demographic information (N = 8)

Age (years)	n (%)
18-24	4 (50%)
25–34	2 (25%)
45–54	1 (12.5%)
55-64	1 (12.5%)
Gender	
Female	5 (62.5%)
Male	1 (12.5%)
Prefer not to say	2 (25%)
Living arrangements while at college	
Living at home with parents	2 (25%)
Living in their family home	2 (25%)
Living in private rented accommodation	3 (37.5%)
Living in university run accommodation	1 (12.5%)
Parental/family/other caregiving responsibilities	1 (12.5%) – Parent
People who had a part time job	
Pre-test	2 (25%)
Post-test	3 (37.5%)
Mean hours worked a week (pre-test)	14 hours (Range = 8–20 hours/ week)
Mean hours worked a week (post-test)	18.67 hours (Range = 18–20 hours/week)
Completed a postsecondary course before	5 (62.5%)

daily life. Respondents endorse each item on a 7-point Likert-type scale (McCullough *et al.* 2002). Higher total scores indicate a greater inclination towards experiencing gratitude in daily life.

Participants' perspectives on the EMDB (research question three) were investigated with an evaluation/feedback questionnaire comprising a 12-item closed response section where participants rated their satisfaction with different elements of the programme (e.g. quality of content, duration of the programme, facilitator's knowledge) along a scale from 1 to 10. Four open-ended questions were also asked: What was the best part of the programme for you? Was there any part that did not work so well? What would make the Everyday Matters digital badge better? Have you any other comments or feedback?

Demographic data were gathered alongside the pre-intervention measures, as described in Table 1.

## **Procedure**

Pre- and post- paper outcome measures were completed in session one and session eight, respectively. Anonymity was ensured by using a code chosen by each participant to enable the researcher to match pre- and post- questionnaires.

# **Analysis**

Numerical data were entered into SPSS v27 (IBM Corp, 2020). Descriptive statistics were used for the demographic information

and the satisfaction component of the evaluation/feedback questionnaire. The number of positive and negative responses to each of the open-ended feedback questions was tabulated. Not all participants completed all outcome measure items. The number of participants who completed each question ranged from 5 to 8. Where total scores were available, paired sample *t*-tests and non-parametric related sample sign tests were used to determine if there was a significant difference in mean/median scores on outcome measures pre- and post-intervention.

# **Results**

Table 1 presents demographic information on the participants. Mean satisfaction levels with the relevance of the programme content to their life, quality of weekly session content, supplementary resources, facilitator's knowledge and skills in delivering the sessions ranged from 94% to 99%.

# Occupational competence and occupational value before and after the EMDB

In the pre-test OSA-SF, participants reported having particular difficulty with identifying and solving problems, working towards goals and having a satisfying routine. All who responded (n=7) reported having a lot of difficulty with 'having a satisfying routine'. Areas of particular importance to participants included 'working towards my goals', 'making decisions based on what I think is important' and 'effectively using their abilities'. Participants identified 'having a satisfying routine' and 'handling their responsibilities' as priority areas to target for improvement.

Of the eight who completed the OSA-SF post EMDB, six reported having difficulty 'taking care of myself', four reported having difficulty 'managing finances' and five reported having difficulty with 'having a satisfying routine'. Good occupational performance was reported in these areas: 'getting where I need to go', 'handling my responsibilities', 'being involved as a student/ worker/volunteer/family member', 'making decisions based on what I think is important' and 'effectively using my abilities'. Daily activities identified as important included 'taking care of myself', 'getting things done that they need to do', 'having a satisfying routine', 'handling my responsibilities', 'working towards my goals', 'making decisions based on what I think is important' and 'effectively using my abilities'. The most common highlighted priority area for improvement, identified by three out of the six who responded, was 'working towards my goals'. Median occupational competence scores increased from 27 to 34 while median occupational value scores increased slightly from 25 to 27 (Table 2a).

# Mental well-being, sleep health, mindset, self-compassion and gratitude before and after the EMDB

Mean scores in the WEMWBS (Table 2b) increased significantly from 40 to 47.38 (p=0.01), showing increased overall sense of well-being amongst participants, whilst RU\_SATED scores dropped slightly from a median of 8 to 7. RITIS scores indicated a significant strengthening of growth mindset amongst participants (p=0.03). Self-compassion scores significantly increased from baseline to follow-up (p=0.006), while gratitude scores improved slightly.

## **Discussion**

This study offers preliminary evidence that an occupational therapy based universal time-use and well-being intervention 236 E. Hunt and L. Coombes

Table 2a. Differences in median scores pre- and post- EMDB (related samples sign tests)

Outcome meas	sures	Median (Q1, Q3)	Median (Q1, Q3)	<i>p</i> -value	Description	
OSA_C	n = 7	27 (26, 31)	34 (30, 40)	.125	6 positive differences, 1 negative difference	
OSA_V	n = 5	25 (21, 28)	27 (22.5, 33)	.375	4 positive differences, 1 negative difference	
RITIS**	n = 7	18 (10, 37)	16 (8, 23)	.031*	6 negative differences, 1 no change	
RU_SATED	n = 5	8 (6.5, 9)	7 (5, 9)	1	1 positive difference, 2 negative differences, 2 no change	

<sup>\*</sup> $p \le 0.05$ .

Table 2b. Difference in mean scores pre- and post-EMDB (paired sample t-tests)

Outcome measures		Mean (SD)	Mean (SD)	<i>p</i> -value
SCS-SF	n = 8	2.51 (0.76)	3.10 (0.78)	0.006*
GQ-6	n = 8	31.13 (7.75)	31.63 (7.96)	0.805
WEMWBS	n = 8	40.00 (5.63)	47.38 (4.41)	0.011*

SD, standard deviation.

was feasible to deliver and acceptable to first-year undergraduate students. Statistically significant results were found relating to improved levels of self-compassion, growth mindset and overall well-being amongst participants. These findings are encouraging, given the wide-ranging health benefits associated with self-compassion and growth mindset for college students (Smeets *et al.* 2014; Paunesku *et al.* 2015; Gedik, 2019). There was a deterioration in sleep health measured by the RU\_SATED in the post-test. This could be related to the post-test being administered close to examinations at the end of the semester.

In 2017/2018, 93% of full-time undergraduate new entrants to higher education in Ireland were aged 17–24 years, with the majority aged 19 years (Higher Education Authority, 2018). However, only half of the participants in the EMDB were aged 18–24 years. The sample had a greater representation of older students and students who had previously completed a post-secondary course. By definition, these students had more academic and life experience and yet still self-selected to engage in and complete the EMDB. Further delivery of the EMBD with larger first year cohorts will allow for more robust sub-group analysis of the experiences and outcomes amongst different age groups within the first year cohort.

Many of the challenges reported by participants related to occupational issues such as managing finances, having a satisfying routine and taking care of oneself. Whilst not statistically significant, there were improvements with regard to perceived occupational competence and value for occupations. Satisfaction with performance in daily occupations may be related to adjustment in university (Keptner, 2019). However, changes in living situations, employment status and curricular demands require ongoing adjustments during the college years (Keptner, 2017) and so it is possible that OSA-SF scores may increase or decrease. Equipping students with the knowledge and transferable skills to adapt daily routines and patterns of thought may enable them to engage in a daily round of activities that enhance their health and meet the evolving demands of college life.

Knoesen and Naudé (2017) and Harris (2019) amongst others highlight the need for support when adjusting to university life, not only in relation to academics but practically, environmentally and socially, on an ongoing basis. With their expertise in daily activities and well-being (Gewurtz et al. 2016), occupational therapists are

well placed to provide this support (Spencer *et al.* 2017; Royal College of Occupational Therapists, 2018; Keptner & McCarthy, 2020; Hunt, 2021).

Participant feedback was overwhelmingly positive. Participants appreciated the practical relevance and scientific underpinnings of the programme content. The sense of belonging within the group and having insightful conversations with other group members were particularly valued by participants. Creating cultures and experiences on campus that support belonging is increasingly recognised as key to student success (Baldwin *et al.* 2020). Situating the EMDB intervention as a well-being programme for learning and life offered within mainstream rather than health or disability services may have increased its accessibility, appeal and the experience of belonging for participants.

#### **Limitations**

By its nature, this feasibility study was limited in sample size and therefore underpowered. Given this was a pilot study, the researchers cannot outrule the impact of biases such as selection bias, observation bias and confirmation bias (Keptner, 2017). Nevertheless, the results are encouraging and support further development and evaluation of the EMDB intervention (Medical Research Council, 2008).

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**Conflicts of interest.** The authors declare no conflicts of interest.

**Ethical standards.** The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The authors assert that ethical approval for publication of this feasibility study has been provided by the Social Research Ethics Committee in University College Cork. Written informed consent was obtained from all study participants.

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Promoting Belonging, Growth Mindset, and Resilience to Foster Student

<sup>\*\*</sup> Reduction in RITIS score represents a stronger growth mindset.

<sup>\*</sup>p < 0.05.

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