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Mental health of new and recent graduates during the university-to-work transition: a scoping review protocol

Olga Zayts, David Matthew Edmonds [ID] , Brandon Chee Kin Kong, Zoë Fortune

[Check for updates]

School of English, The University of Hong Kong, Hong Kong, Hong Kong

Correspondence to
Dr David Matthew Edmonds;
edmonds@hku.hk

ABSTRACT

Introduction University students face challenges when starting their careers and entering the workforce after tertiary education is associated with negative psychological outcomes. The planned scoping review will synthesise the literature on the impact of university-to-work transitions on the mental health of new and recent graduates. We will describe the characteristics and main findings of the studies, and will examine the variables associated with, and the theories used to explain, the relationship between transitions to work and graduates' mental health.

Methods We will search the following databases: Scopus, Web of Science, ERIC, PSYCINFO, Social Sciences Citation Index, CINAHL Plus, Ovid MEDLINE and Google Scholar, to locate published and unpublished literature. The included studies will focus on undergraduate and postgraduate university students during planned or current university-to-work transitions, as well as early-career workers. We will include studies involving people who have left or are in their final year of study, are undergoing career transition preparation or have worked for no longer than 3 years since graduation. Studies from all countries, those published in English and since 2000, will be included. We will use a set of predefined search terms and we will extract studies using the EndNote V.20 reference management software. Two reviewers will screen and assess the identified studies using the Covidence software. Finally, we will present the data in a summary table and will qualitatively analyse the studies using thematic analysis.

Ethics and dissemination Our scoping review does not require ethical approval. The scoping review's findings will be disseminated in peer-reviewed journal articles and conference presentations, and will inform the development of training resources for different stakeholders as part of a wider research project.

Trial registration number The study has been registered with the Open Science Framework (https://osf.io/gw86x).

STRENGTHS AND LIMITATIONS OF THE STUDY

⇒ Our scoping review will be the first attempt, to the best of our knowledge, to fully survey, encompass, and evaluate the literature on the impact of transitioning into the workforce on the mental health of new and recent university graduates.
⇒ Our planned review will employ an extensive search and examination of eight electronic databases to find peer-reviewed and grey literature on this pertinent topic.
⇒ The review is part of a wider project on the different impacts of university-to-work transitions on fresh graduates. The findings from this review will support the development of practical and impactful resources for students, employers and university staff to support new graduates in moving into the workforce.
⇒ Our review will be somewhat limited because of its scope, because we will only include studies published since 2000 and those written in the English language.

INTRODUCTION

Transitions are periods of change and mobility, with people moving between different life stages, such as from childhood to adulthood and from working life to retirement.[1] One important transition that many people experience is the move from university education into the workforce, which often involves people taking up their first career. This transition period is fraught with challenges as new graduates grapple with matters such as unemployment and financial strain.[2–4] Moving from university into the workforce can also negatively impact new graduates' well-being—and their mental health. There is growing evidence suggesting that new graduates in the labour market can experience mental ill health such as anxiety, depression[5 6] and stress upon searching for a job after graduation.[7] The mental health difficulties associated with this transition period have arguably also been exacerbated because of the recent COVID-19 pandemic.[8–10] Furthermore, given the well-established link between mental and physical health,[11] it is perhaps unsurprising that some studies have shown that students preparing to enter the workforce also report suffering from physical ailments during this period,[12] possibly related to the concept of somatisation,[13] which has been documented among university students. Nevertheless, it is important to note that the university-to-work

transition is also associated with positive mental health outcomes such as increased life satisfaction, flourishing, and psychological well-being.[7 14 15]

Before proceeding, it is necessary to outline existing conceptualisations of mental health. The WHO labels mental health as 'a state of mental well-being that enables people to cope with the stresses of life, realise their abilities, learn well and work well, and contribute to their community' (WHO 2022[16] para.2), a definition that is broad, complex, and encompasses multiple concepts. We partly adopt this definition but restrict our focus to 'mental ill health'. We treat mental ill health in itself as a 'wide spectrum'[17] (p.71) and as encompassing common mental disorders such as depression, anxiety, and stress at one end, and more complex and severe mental disorders such as schizophrenia at the other.[17 18] Our definition includes both diagnosed and non-diagnosed mental ill health. In all, the reason that we focus on 'one side' of mental health—namely, mental ill health—is that it is simply too broad a concept to focus on within one scoping review. Thus, throughout the rest of this protocol, we use 'mental health' as an understandably crude shorthand to refer to our conceptualisation as outlined above.

Not every university-to-work transition is the same. Indeed, one's experience of moving into the workforce can be different depending on the expectations and demands of the job. To take just one example, there is evidence suggesting that the university-to-work transition for medical graduates is outwardly different and has distinctive mental health impacts, compared with those graduates from other disciplines.[19 20] Perhaps unsurprisingly then, there have been previous systematic reviews on the mental health of medical graduates.[19 20] As such, we exclude from our scoping review those studies focusing on medical and nursing graduates entering the healthcare sector workforce. The mental health of students while they study at university has also been studied extensively.[6 10] Accordingly, our proposed scoping review aims to understand the effects of moving into the workforce on the mental health of university graduates by synthesising the relevant existing literature on this topic.

Our review addresses three research questions. First, we ask, what are the main findings of studies on the impact of university-to-work transitions on the mental health of students and recent graduates? Second, what are the methodological and epistemological characteristics of the studies that exist on this topic? Third, what are the theories that these studies posit to explain the mental health of graduates during this transition period?

As an initial step, we have searched the Scopus and Web of Science databases to examine the previous research on the effects of university-to-work transitions on the mental health of (non-medical) graduates. Our initial search located some scoping and systematic reviews that have focused on the different health outcomes during the transition from secondary to tertiary education,[21] the education to employment transitions for intellectually disabled young people[22] and the factors blocking young

people with diagnosed mental health conditions taking up jobs.[23] An Australian report identified in the grey literature focused on the mental health outcomes of young adults as they move into work, but not specifically on the university-to-workplace transition.[24] Therefore, there are systematic and scoping reviews on related, but not the same, topics. In all, to the best of our knowledge, no review exists on the topic of the impact of the university-to-work transition on graduates' mental health.

Our scoping review is appropriate because there is only a small literature base on this topic (see also online supplemental appendix 1).[25] The review will synthesise the existing literature on the mental health outcomes of university graduates (including postgraduates) as they move into the workforce. Our work is timely because of the recent impact of the COVID-19 pandemic on the students' mental health and its effect on the job market.[5 26] The scoping review will also inform key elements of a broader project being carried out by the authors on the educational, social and health impacts of the COVID-19 pandemic on university graduates transitioning to the workforce in Hong Kong.

METHODS AND ANALYSES
Scoping review methodology

Our scoping review adopts the methodological guidelines set forth by the Joanna Briggs Institute[27] and further articulated by Peters and colleagues.[28] In addition, we will follow the recommendations outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR).[29] Our scoping review will comprise of four steps that are detailed below: first, finding the relevant research studies; second, choosing the studies for inclusion; third, retrieving the data; and fourth, presenting and analysing the data. It is anticipated that the study will begin on 1 April 2023 and end by 1 June 2023.

Patient and public involvement

Three key stakeholders are involved in the wider project of which this scoping review is a part—namely, university students and graduates, employers, and university staff. A co-author of this article (BCKK) is also a member of a cohort (those who graduated in 2021) who has recently experienced a university-to-work transition. These stakeholders will not be directly involved in the design and undertaking of the scoping review. A notable exception is that we may contact various academics and student ambassadors from the wider research project to help us identify other relevant studies for inclusion in the scoping review.

STEP 1: FINDING THE RELEVANT STUDIES

We follow the population, context, concept rule developed by Peters and colleagues[28] to help us delimit the following inclusion and exclusion criteria for studies that

will be selected for the scoping review. Regarding the population, our review will focus on non-medical students and graduates. Specifically, we will include studies whose samples include participants who are final year undergraduate and postgraduate university students who are undergoing preparations to transition to the workforce, students who have graduated within the last 3 years and those who started working within the last 3 years. We will exclude studies focusing on participants who are medical, nursing and dentistry students, wherein we follow a dictionary definition and consider such students as anyone who is involved in a formal study programme that will culminate in a formal qualification in one of these areas.[30] We exclude studies with such participants for several reasons. Medical students have outwardly different curriculum and programme structures and indeed are often already doing 'in-work' training prior to graduation.[20] In addition, these students have unique learning environments as they are often exposed to injury, sickness, and death throughout their studies.[31] Furthermore, existing evidence suggests that medical students have exhibited higher rates of adverse mental health compared with other students even prior to the pandemic.[20] We also exclude studies whose samples include students who are in vocational education institutions. To be clear, we are not excluding such studies on the basis that vocational training institutions are less important or prestigious than universities. Rather we wish to limit our scoping review to a more defined set of studies. Finally, we also exclude studies whose samples focus on students with physical, intellectual or neurocognitive disabilities because we do not wish to conflate these conditions (especially the latter two) with mental illness or mental disorder.

Our review will be as inclusive as possible with regards to geographic context and thus we will include studies from all countries and jurisdictions. In a more conservative vein, we will only include studies from 2000 to the present and only those published in English. We restrict our focus to studies published after this date in order to capture the most up-to-date research. It is important to only include English studies as this is the shared working language of the research team.

The first concept that our scoping review focuses on is 'mental health'. In line with our conceptualisation of mental health, our review will include studies that focus on mental ill health, that is, states of psychological suffering and distress[18] such as anxiety and depression (diagnosed and undiagnosed), as well as clinical disorders such as schizophrenia. We also include the term 'negative emotions' in our database searches for two reasons. First, in our initial search of the Scopus and Web of Science databases, we found that the abstracts of relevant studies often included a focus on emotions alongside mental health. Second, existing research has established that emotions and mental health are closely interrelated in conceptual and empirical terms.[32 33] Our conceptualisation excludes neurodevelopmental and cognitive

disorders such as autism spectrum disorder because such conditions are not mental health problems.

The second concept relevant to our scoping review is 'university-to-work transitions'. In line with our definition of this concept, we will include studies that focus on transition as involving students who: have left or will leave university within a year; are prepared to or are undergoing career transition preparation; have graduated within the last 3 years but remain unemployed and have worked for a maximum of 3 years in the workplace on graduation.

Our scoping review will include studies with quantitative and qualitative findings, as well as mixed methods designs. We will include all methodologies employed within both quantitative and qualitative studies. Thus, our scoping review will be maximally liberal with regards to the scope of study designs and evidence that we will include. Grey literature will also be included in accordance with the inclusion criteria. In terms of the excluded studies, we will disregard those works that are dedicated to theory development and evaluation; any existing reviews (eg, scoping, systematic, and narrative); meta-analyses; commentaries; opinion pieces and editorials. We exclude these kinds of sources on the basis that they are unlikely to contain primary data. We will only include book chapters as sources if they contain primary data. For ease of reference, the inclusion and exclusion criteria for our scoping review are detailed in table 1 below.

Our search will find and collate published peer-reviewed articles and unpublished grey literature (such as policy documents and research reports from non-governmental organisations). Two reviewers (DME and BCKK) have already conducted a preliminary search of four databases (the Cochrane Library, FigShare, Open Science Framework and Google Scholar) to ensure that there were no existing systematic or scoping reviews on our topic (or, indeed any reviews that are being undertaken). The two reviewers have also searched the Scopus and Web of Science databases to obtain a superficial understanding of the existing literature on the topic. To do so, the two researchers examined the titles and abstracts of various studies to summarise the recurrent keywords and terms used in the existing literature. Following this search of the two databases, we created a list of potential search terms. The two reviewers and the primary investigators (OZ and ZF) refined this list down to the final set of search terms contained in online supplemental appendix 1. We will deploy these terms in the full search of the following databases: Scopus, Web of Science, ERIC, PSYCINFO, Social Sciences Citation Index, CINAHL Plus, Ovid MEDLINE and Google Scholar. Another way that we will find studies is by examining the list of cited works in the articles that we include in the scoping review. Finally, we will consult academics from psychology, psychiatry and workplace mental health as well as student ambassadors from the authors' wider project to further identify sources of literature and websites for unpublished and grey literature.[28] We will keep a written record of those studies that are identified through the checking of reference lists and in consultation with other stakeholders.

Table 1 Inclusion and exclusion criteria for studies in the proposed scoping review.

Aspect of study	Inclusion criteria	Exclusion criteria	Population, context, concept
Sample participants	Final year undergraduate students	Undergraduate students in earlier years	Population
	Final year postgraduate students	Postgraduate students in earlier years	
	People who have graduated within 3 years (they are allowed to have returned to study within this period)	People who graduated more than 3 years ago	
	People who have been working for less than 3 years (excluding internships)	People who have been working for more than 3 years	
	Students from all other disciplines	Medical, nursing and dentistry students	
	Attending/attended universities	Attending/attended vocational or training institutions	
	No disabilities	Physical, intellectual, and neurological disabilities	
Geographical location	All countries and jurisdictions	No exclusion criteria	Context
Language	Published in English	Published in any other language	
Date of publication	Published since 2000	Published prior to 2000	
Mental health	Mental ill health (eg, anxiety and depression), poor mental health (eg, stress and burnout) and mental illness (eg, schizophrenia)	Mental well-being (such as resilience)	Concept
	Negative emotions (eg, sadness)	Positive emotions (eg, happiness)	
	No inclusion criteria	Neurocognitive disorders	
University-to-work transitions	Students leaving university within a year	Students leaving university in more than a year	
	People undergoing career transition preparation	People not undergoing career transition preparation	
	People who are 3 years post-graduation	People who are more than 3 years post-graduation	
Study method and data	Quantitative findings	No exclusion criteria	Miscellaneous
	Qualitative findings		
	Mixed-methods designs		
	All methodological designs		
Type of source	Peer-reviewed journal articles	Theory development and evaluation	
	Grey literature	Scoping, systematic and narrative reviews	
	Book chapters (if presenting primary data)	Meta-analyses	
		Commentaries	
		Opinion pieces	
		Editorials	

STEP 2: CHOOSING STUDIES FOR INCLUSION IN THE REVIEW

We will undertake a four-part process to decide on the studies to be included in the scoping review. This process will follow the existing methodological guidelines for scoping reviews.[27–29] The first part will be a full search of all the listed databases, wherein we will transfer the citations into EndNote V.20. This software will serves as a centralised repository of all potential studies. Naturally, we may find duplicate records of studies across databases, which will be noted and deleted. We will also transfer all the identified studies (and associated materials) to Covidence, which is a software specifically used to aid in conducting systematic and scoping reviews. Two independent reviewers will conduct the full search in parallel, with each person being responsible for searching through four databases.

The second part will be a preliminary 'check' of the inclusion (and, therefore, exclusion) criteria on a selection of 10 studies identified in the full search. The preliminary check will function to ensure that both reviewers are in agreement in correctly applying the inclusion criteria.

The third part will be a preliminary screening of the identified studies using the Covidence software. At this stage, the two reviewers will focus only on the titles and abstracts of the exported citations. In this screening, the reviewers will need to decide whether each study qualifies for inclusion (or not) in the scoping review. While this screening will be done individually, the two reviewers will also meet face to face to consider any discrepancies that occur during the preliminary screening process. Detailed notes will be kept of these discussions for the sake of transparency and to aid in solving any further problems. In addition, each reviewer will keep a detailed log of their exact methods during the preliminary screening process, which will also be regularly reviewed by the primary investigators.

The fourth part will be a comprehensive screening of the entire text of all the identified articles to further narrow down the studies for final inclusion. A third reviewer will make decisions regarding any discrepancies during this full-screening process. For instance, if the two reviewers do not agree on whether a study should be included, the third reviewer will help decide whether the study should be disregarded or not. We will document in written form the justification for excluding certain studies at the stage of comprehensive screening and these justifications will be included in the published scoping review. We will not check the quality of each study selected for inclusion in the final review as this is not a required step in a scoping review.[34] Finally, we will depict the search results and screening process in diagrammatical format as stipulated by PRISMA-ScR.[29] We will include extra contextual information about the search and screening process in written form alongside the diagram. Finally, it is important to note that although we have presented the process here as linear, it is foreseeable that some parts may be repeated and refined subject to the demands of actual review.[28]

STEP 3: DATA RETRIEVAL AND SUMMARY

Following the comprehensive screening step, we will retrieve the relevant information from the studies that qualify for inclusion in the scoping review. In table 2, we have included the draft data retrieval form that we will use in our scoping review. We will input the information from each identified paper into this form. We may need to alter the data retrieval form due to issues that may arise during the scoping review. We will, of course, justify these changes in the final published scoping review. The form indicates that we will retrieve a range of basic identifying information about each study, such as author names, year of publication and journal title. We will also retrieve information about

the methods, such as the theoretical framework, data collection methods, and sample size. Finally, we will summarise the key findings and details from each paper in relation to the impact of transitions on the mental health of graduates, the workplace and the nature of transitions.

Table 2 Data retrieval form used for the scoping review	
Details of individual studies	
Basic information	
Author(s)	–
Title of the paper	–
Date of publication (year)	–
Journal title	–
DOI and/or URL	–
Peer-reviewed article or grey literature	–
Database from where study was sourced	–
Information on methods and data	
Study type (qualitative, quantitative and mixed-methods study)	–
Methodological design	–
Theoretical framework of the study (if explicitly identified)	–
Study aims and objectives	–
Geographical location/context examined by the study	–
Length and/or timescale of the study	–
Population and/or sample size in the study	–
Sample characteristics of the study	–
Additional stakeholders in the study	–
Component 1: mental health	
Definition of mental health/mental ill health in the study	–
Key findings related to the impact of university-to-work transitions on the mental health of graduates	–
Theories posited to explain graduate mental health	–
Other variables associated with mental health during university-to-work transitions	–
Mediating and/or moderating variables of the link between mental health and work transitions	–
Scales used to assess mental health	–
Component 2: university-to-work transitions	
Duration of transition(s)	–
Nature and context of transition(s)	–
Component 3: workplaces	
Type of workplace and industry	–
Differences in mental health by job position, industry and length of employment (if any)	–

STEP 4: PRESENTING AND ANALYSING DATA

The results will be presented in two ways in the final published scoping review. First, we will present the details of the selected studies in a table. The table will summarise the basic identifying information of each study as well as the key findings that are relevant to components 1, 2, and 3 of the data retrieval form. Second, we will conduct a thematic analysis of the studies and findings using inductive and deductive techniques.[35] This thematic analysis will be based on the information taken from the data retrieval forms as well as detailed analytic notes that will be kept throughout the review of each study.

ETHICS AND DISSEMINATION

The scoping review does not require ethical approval because it uses materials that have already been made publicly available and that have been formally published. Nevertheless, the scoping review is part of a project that has been given ethical clearance by the author's university. In addition, the review does not collect data that requires the consent of human participants. The findings of the scoping review will be published in peer-reviewed journal articles, as well as being presented at both academic and professional conferences. This scoping review forms just one part of a wider project that examines the various impacts of the COVID-19 pandemic on the transitions of new graduates into the Hong Kong workforce. Alongside the other arms of the project, this scoping review will help create different resources for use by students, employers and university staff in trying to make the transition into the workforce easier for fresh graduates in Hong Kong.

terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

ORCID iD
David Matthew Edmonds http://orcid.org/0000-0002-8277-9980

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APPENDIX 1: SCOPING REVIEW SEARCH STRATEGY

The table below details the search terms that will be utilized for the scoping review. The table also reports the results of an initial search of the Scopus database on 19 December 2022. In this initial search, we searched the field codes TITLE-ABS-KEY, with a date range from 2000 to present, and we only included English language sources.

Search line number	Search terms and operations	Result numbers
1	"mental health" OR "mental well being" OR "mental ill health" OR "mental illness" OR "psychological well being" OR "mental health condition" OR resilience OR stress OR anxiety OR depression OR burnout OR "negative emotion*" OR "poor mental health" OR "mental health problem*" OR "mood disorder*"	3,207,449
2	"student graduate*" OR "college graduate*" OR "final year student*" OR "college senior*" OR "university senior*" OR "school graduate*" OR "young adult*" OR "young people" OR "undergraduate*" OR youth OR "school leaver*" OR "postgraduate*"	1,459,149
3	"university to work transition*" OR "school to work transition*" OR "college to work transition*" OR "life transition*" OR "university to career transition*" OR "university to workplace transition*" OR "career entry" OR "university to workforce transition*" OR "career transition*"	3,179

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4	"workplace*" OR "lab?r market" OR career OR office OR "workforce" OR "marketplace" OR "job market*" OR organi?ation OR business OR recruitment	3,132,202
5	1 and 2 and 3 and 4	59