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Psychological resilience during COVID-19: A meta-review protocol

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Title page

Psychological resilience during COVID-19: A meta-review protocol

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Resilience, Psychological; COVID-19; Mental Health; Adaptation, Psychological; Review, Systematic

Word count

2384 words

Abstract

Introduction: The global COVID-19 pandemic continues to have wide-ranging implications for health, including psychological well-being. A growing corpus of research reviews has emerged on the topic of psychological resilience in the context of the pandemic. However, this body of work has not been systematically reviewed for its quality, nor with respect to findings on the effectiveness of tools and strategies for psychological resilience. To this end, a meta-review protocol is proposed with the following objectives: (1) identify review work on the topic of psychological resilience during COVID-19; (2) assess the quality of this review work using A MeaSurement Tool to Assess systematic Reviews (AMSTAR 2); (3) assess the risk of bias in this work; (4) generate a narrative summary of the key points, strengths, and weaknesses; (5) identify the psychological resilience strategies that have been reviewed; (6) identify how these strategies have been evaluated for their effectiveness; (7) identify what outcomes were measured; and (8) summarize the findings on strategies for psychological resilience so far, providing recommendations, if possible.

Methods and analysis: A systematic meta-review will be conducted in accordance with the Preferred Reporting Items for Systematic Reviews (PRISMA-P) and Joanna Briggs Institute umbrella review guidelines. Electronic searches of general databases, especially Web of Science and SCOPUS, will be conducted. Only results from January 2020 onwards will be considered, coinciding with the COVID-19 pandemic. Only results in English will be included. Descriptive statistics, thematic analysis, and narrative summaries describing the nature of the reviewed work and evaluation of psychological resilience strategies will be carried out.

Ethics and dissemination: Ethical approval is not needed for systematic review protocols. The results of the meta-review will be published in an international peer-reviewed journal. The raw and summarized data will be shared in the journal or other open venues.

PROSPERO registration number: CRD42021235288

Article summary

Strengths and limitations of this study

1. The protocol was crafted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Protocols (PRISMA-P) guidelines.
2. The protocol was designed to be replicable and comprehensive, involving keywords and descriptors that are highly similar or relevant to psychological resilience so that multiple disciplines can be searched and a variety of measures can be assessed.
3. The protocol was designed to evaluate the quality of review work conducted during COVID-19, and so is not limited to systematic reviews and meta-analyses.
4. Limiting the inclusion criteria to papers that include the key term “psychological resilience” in the abstract may lead to potentially relevant papers being missed.
5. Limiting the inclusion criteria to English papers may lead to language bias.

Introduction

The COVID-19 global pandemic has been a disruptive force across many areas of life. In healthcare, mental health and psychological well-being has emerged as a key topic [cf. 1–4]. Most nations have strongly recommended or enforced social distancing, self-quarantine, and physical isolation, all interventions that have known or predicted impacts on psychological well-being [5]. This has subsequently raised the issue of how to measure, manage, and prevent, if possible, negative outcomes [1–3,6,7]. Psychological resilience is defined as positive adaptability or the ability to "bounce back" when confronted with new and especially negative situations involving adversity, stress, and trauma [8,9]. In a global pandemic such as COVID-19, the degree to which populations achieve psychological resilience, and how, may be essential for combating comorbidities related to psychological well-being. In assessing the impact of psychological resilience on the impact of COVID-19 on mental stress and mental well-being, results of different studies may be systematically biased by the target populations they observe. Socio-economic status [10] and cultural factors [11], among others may all impact the role of psychological resilience in moderating the impact of COVID-19 stressors.

One way to assess the state of affairs while taking account of factors such as quality and bias in review work is through a meta-review process. Meta-reviews, also called umbrella reviews or overviews of reviews, are systematic reviews of existing survey work that aim to generate clarity and consensus on a certain topic or research question [12,13]. A key aspect of meta-reviews is an assessment of quality of the review work conducted [12,14,15]. The intended beneficiaries are the academic community, the public at large, and especially decision-makers. Typically, meta-reviews summarize survey work that represents the highest level of evidence achievable: systematic reviews and meta-analyses of primary studies [12]. Yet, COVID-19 has created a special situation in which there is an urgent demand for answers as well as greater flexibility in what gets published [16]. This "paperdemic" is raising serious questions about scientific integrity during COVID-19 [16]. We expect that the body of review work on psychological resilience is no different: that it has and will be subject to the same pressures of time and demand. Indeed, a cursory review of the literature that purports to synthesize prior research shows that much of the work cannot be classified as systematic reviews or meta-analyses. Yet, as citation counts and news coverage indicate, we are relying on this body of work to understand the state of affairs and make decisions about healthcare. As such, the effects of the COVID-19 situation on research practice needs to be acknowledged and integrated into meta-review protocols. This means expanding the purview of meta-review protocols to include other kinds of survey work beyond systematic reviews and meta-analyses. Additionally, protocols must assess the quality of the methods used, summarize the state of the art, and generate consensus for healthcare decision-making.

To this end, the goal of this meta-review protocol is to provide a means of systematically surveying the previous and emerging review work, broadly defined, on psychological resilience published during COVID-19. A two-pronged approach is provided: (1) describe the nature and quality of this body of work and (2) summarize the findings on the strategies that have been deployed to assess, maintain, and encourage psychological resilience during COVID-19. The results of conducting this protocol will help us understand the state of the literature methodologically as well as summarize the findings for building knowledge and taking action.

Methods and analysis

Objectives

The goal is to assess the nature and quality of survey work on the topic of psychological resilience, and to summarize findings on the strategies that have been deployed to assess, maintain, and encourage psychological resilience during COVID-19. Two research questions follow from this: (RQ1) What is the nature and quality of the survey work published on this topic? (RQ2) What consensus can be derived from the survey work on strategies used to assess, encourage, and/or maintain psychological resilience during COVID-19? In answering these questions the following objectives will be met: (1) identification of review work on the topic of psychological resilience during COVID-19; (2) assessment of the quality of this body of work; (3) assessment of the risk of bias in this body of work; (4) generation of a narrative summary of the key points, strengths, and weaknesses revealed by this body of work; (5) identification of the psychological resilience strategies that have been reviewed; (6) assessing the effectiveness of these strategies; (7) identification of outcomes; and (8) summarization of the findings so far, with recommendations where possible.

Study design

The meta-review protocol will be conducted in line with the Preferred Reporting Items for Systematic review and Meta-analysis Protocols (PRISMA-P) guidelines [17], with additional guidance for meta-reviews according to Aromataris et al. [12].

Search strategy and information sources

Scopus and Web of Science, the standard general and broad-indexing databases, will be searched in May 2021. Only peer-reviewed English language publications (e.g., not papers posted to archival websites or grey literature) will be included. Preliminary searches were conducted on January 16th and 19th, 2021 to test the initial queries and keywords as well as to generate a first look at the state of affairs. See Table 1 for the full search queries.

Table 1. Search queries

Database	Metadata	Query	Filters
Web of Science	Topic (TS)	(AB=resilien* AND TS=(resilien* OR psycholog* OR personal* OR positiv* OR "cope" OR "coping" OR "personal strength") AND TS=((covid OR covid-19 OR coronavirus OR Sars-Cov-2) AND ("literature review" OR "systematic survey" OR "systematic review" OR "rapid review" OR "literature survey" OR "review article" OR "survey article" OR "meta-analysis" OR "living review" or "mapping review" or "qualitative evidence	Year (2020, 2021), Language (English), Doctype (Article, Book, Book Chapter, Early

		synthesis" or "scoping review" or "state-of-the-art review" or "systematized review" or "narrative review" or "comprehensive review"))) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article OR Book OR Book Chapter OR Early Access OR Proceedings Paper)	Access, Proceedings Paper)
Scopus	Article title, Abstract, Keywords	(TITLE-ABS(resilien*) AND (TITLE-ABS-KEY(psycholog*) OR TITLE-ABS-KEY(personal*) OR TITLE-ABS-KEY(positiv*) OR TITLE-ABS-KEY(cope) OR TITLE-ABS-KEY(coping)) OR TITLE-ABS-KEY("personal strength")) AND (TITLE-ABS-KEY(covid) OR TITLE-ABS-KEY(covid-19) OR TITLE-ABS-KEY(coronavirus) OR TITLE-ABS-KEY(sars-cov-2)) AND (TITLE-ABS-KEY("literature review") OR TITLE-ABS-KEY("systematic survey") OR TITLE-ABS-KEY("systematic review") OR TITLE-ABS-KEY("rapid review") OR TITLE-ABS-KEY("literature survey") OR TITLE-ABS-KEY("review article") OR TITLE-ABS-KEY("survey article") OR TITLE-ABS-KEY("meta-analysis") OR TITLE-ABS-KEY("living review") OR TITLE-ABS-KEY("mapping review") OR TITLE-ABS-KEY("qualitative evidence synthesis") OR TITLE-ABS-KEY("scoping review") OR TITLE-ABS-KEY("state-of-the-art review") OR TITLE-ABS-KEY("systematized review") OR TITLE-ABS-KEY("narrative review") OR TITLE-ABS-KEY("comprehensive review"))) AND (LIMIT-TO (PUBYEAR,2021) OR LIMIT-TO (PUBYEAR,2020))	Year (2020, 2021), Language (English)

Eligibility criteria

Study design

All types of systematic research surveys will be included. Relevant terms are included in the search keywords based on the typology created by Grant and Booth [18]. Unpublished papers will be excluded.

Condition or domain being studied

Survey work on psychological resilience during COVID-19, involving the general population or specific subsets, and reporting on strategies for assessing, encouraging, and/or maintaining psychological resilience during COVID-19, will be included. Survey work before COVID-19 or excluding COVID-19 will not be included. All strategies, whether proposed or evaluated, whether during COVID-19 or prospectively applied to COVID-19, will be included. Survey work that does not feature psychological resilience or adjacent topics, e.g., personal strengths, positive functioning, coping strategies, etc., will be excluded.

Setting

Only work conducted on the COVID-19 pandemic will be included. However, we will evaluate whether or not the surveyed reviews include work from before the pandemic.

Time frame

A date range of January 2020 and May 2021 will be set, coinciding with the start of COVID-19 up until the start of the planned query searches.

Selection process

One researcher will run the search queries. The researcher will then extract the results to Zotero, a reference management software, and screen the results by applying the inclusion/exclusion criteria based on the title and abstract. Two researchers will then independently rate the quality of the surveys using A Measurement Tool to Assess systematic Reviews (AMSTAR 2) [19]. Inter-rater reliability testing using Cohen's Kappa statistic will be used. Disagreements will be discussed and re-assessments will take place until a Kappa value of .80 or above is achieved between the ratings of the two researchers. A third researcher will be involved as a tiebreaker in the case of unresolvable disagreements between the two researchers. Papers that were mistakenly included in the first step or are of poor quality (3 or less) will be excluded. Google Sheets, Covidence, and/or SRDR+ will be used to track and record decisions and ratings and their analysis.

Data collection and extraction process

Three researchers will divide the corpus of papers and extract the data independently, but within the same shared spreadsheet/database. Extracted data will include: citation details, objectives, type of survey, participant demographics, setting and context, number of databases sourced and searched, date range of database searches, publication date range of studies, number of studies, types of studies, country of origin of studies, study quality assessment tool used, quality ratings of studies, outcomes reported, method of synthesis/analysis/narrative, measures and instruments related to RQ2, assessment of these measures, effect sizes with confidence intervals, thematic or

content frameworks, major findings. Missing data will be marked with a dash. Google Sheets, Covidence, and/or SRDR+ will be used to record the data.

Outcomes

Several outcomes are expected for RQ1. A description of the nature of surveys conducted will be produced. An assessment of the quality of the body of work using the AMSTAR 2 tool [19] will be provided. An assessment of the risk of bias across studies identified will be generated using a funnel plot of effect size over standardized mean differences plus a measure of heterogeneity, as per the Cochrane PRISMA guidelines [20]. Finally, a narrative summary of key features, including strong points and weaknesses across the body of work, will be derived. Next steps will be presented in the form of a research agenda.

For RQ2, any findings related to the evaluation of psychological resilience strategies will be summarized quantitatively or in narrative form. Measures could include standardized mean differences (continuous variables), odds ratios (dichotomous variables), descriptive statistics for tests of internal and external reliability (e.g., Cronbach's alpha), thematic or content analyses of qualitative data, and more.

Risk of bias (quality) assessment

The ratings resulting from the application of the AMSTAR 2 tool [19] during the study screening phase will be used to assess the quality of each included survey and the overall quality of the body of survey work. The ratings will be processed in line with Natto and Hameedaldain [21], i.e., converted to numbers and summed. Where discrepancies in ratings occur, the average (mean) score between raters will be used.

Data analysis and synthesis

In line with Aromataris et al. [12], we will analyze and synthesize the quantitative and qualitative data separately, per each of our meta-review research questions.

To answer RQ1, we will provide descriptive statistics on the nature of the surveys, including means, medians, standard deviation, and interquartile ranges for all quantitative variables. We will use t-tests to check if gender and other key demographics or variables were equally distributed. For quality, we will categorize the scores from the AMSTAR 2 tool according to the quality categories provided by Shea et al. [19]. We will then take a random selection of other pre-COVID meta-reviews that used the AMSTAR 2 and compare the distribution across categories with our data set.

To answer RQ2, we expect diverse research data, so we will divide the findings by quantitative and qualitative data reported. Quantitative data will then be summarized based on variable, measures, effect sizes, and outcomes. Where possible, we will do meta-analyses. Qualitative data will be summarized in narrative form based on phenomena of interest.

Patient and public involvement

No patient or public involvement is planned. However, the raw and summarized data will be made available after publication.

Ethics and dissemination

No ethics review process was necessary for this work. We do not foresee any safety issues related to this work. We will publish the results of this protocol as a complete meta-review paper in an international peer-reviewed reputable academic journal. We will provide the extracted and summarized data in spreadsheets or similar formats through the journal and/or our institutional repositories, non-for-profit research archives, and/or our personal websites.

Discussion

Meta-reviews are urgently needed for understanding the state of affairs in research survey work as well as the state of the art on healthcare topics even while the COVID-19 global pandemic continues to play out. The proposed overview of reviews will use a reproducible procedure as described in this protocol, including descriptions of data sources, search strategy, and data extraction methods. Thus, we have contributed a comprehensive and replicable meta-review protocol on a timely and vital topic, psychological resilience, that will serve to capture and critically evaluate the quality of review work as well as generate a synthesis of health outcomes and potentially recommendations across fields of study and modes of practice. The meta-review is expected to provide consensus on outcomes as well as provoke a more comprehensive, critical view of survey work during the pandemic.

Author contributions

All authors made substantial contributions to the work. KS led the design of the protocol and drafted the paper. MC contributed to the protocol design, focusing on the data analysis portion and selection of the quality assessment instrument. JG contributed to the protocol design, focusing on the keywords and query design. MC critically reviewed and refined the draft. All authors sourced references. All authors confirmed the paper before submission.

Competing interests

None declared.

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Reporting checklist for protocol of a systematic review and meta analysis.

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		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	2
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	2
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	8

1	Amendments			
2				
3		#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
4				
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8	Support			
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10	Sources	#5a	Indicate sources of financial or other support for the review	9
11				
12	Sponsor	#5b	Provide name for the review funder and / or sponsor	9
13				
14	Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	n/a
15				
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18	Introduction			
19				
20	Rationale	#6	Describe the rationale for the review in the context of what is already known	3
21				
22	Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4
23				
24				
25				
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28				
29				
30	Methods			
31				
32	Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5
33				
34	Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	4
35				
36	Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	4
37				
38	Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	6
39				
40	Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	6
41				
42	Study records - data management	#11c	Describe planned method of extracting data from reports (such as	6
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1	collection process		piloting forms, done independently, in duplicate), any processes for	
2			obtaining and confirming data from investigators	
3				
4	Data items	#12	List and define all variables for which data will be sought (such as	6
5			PICO items, funding sources), any pre-planned data assumptions and	
6			simplifications	
7				
8				
9	Outcomes and	#13	List and define all outcomes for which data will be sought, including	7
10	prioritization		prioritization of main and additional outcomes, with rationale	
11				
12				
13	Risk of bias in	#14	Describe anticipated methods for assessing risk of bias of individual	7
14	individual studies		studies, including whether this will be done at the outcome or study	
15			level, or both; state how this information will be used in data synthesis	
16				
17				
18	Data synthesis	#15a	Describe criteria under which study data will be quantitatively	7
19			synthesised	
20				
21				
22	Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned	7
23			summary measures, methods of handling data and methods of	
24			combining data from studies, including any planned exploration of	
25			consistency (such as I ² , Kendall's τ)	
26				
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29	Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or	n/a
30			subgroup analyses, meta-regression)	
31				
32				
33	Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of	7
34			summary planned	
35				
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37	Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication	n/a
38			bias across studies, selective reporting within studies)	
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41	Confidence in	#17	Describe how the strength of the body of evidence will be assessed	7
42	cumulative		(such as GRADE)	
43	evidence			
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Title page

Psychological resilience during COVID-19: A meta-review protocol

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Keywords

Resilience, Psychological; COVID-19; Mental Health; Adaptation, Psychological; Review, Systematic

Word count

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Abstract

Introduction: The global COVID-19 pandemic continues to have wide-ranging implications for health, including psychological well-being. A growing corpus of research reviews has emerged on the topic of psychological resilience in the context of the pandemic. However, this body of work has not been systematically reviewed for its quality, nor with respect to findings on the effectiveness of tools and strategies for psychological resilience. To this end, a meta-review protocol is proposed with the following objectives: (1) identify review work on the topic of psychological resilience during COVID-19; (2) assess the quality of this review work using A MeaSurement Tool to Assess systematic Reviews (AMSTAR 2); (3) assess the risk of bias in this work; (4) generate a narrative summary of the key points, strengths, and weaknesses; (5) identify the psychological resilience strategies that have been reviewed; (6) identify how these strategies have been evaluated for their effectiveness; (7) identify what outcomes were measured; and (8) summarize the findings on strategies for psychological resilience so far, providing recommendations, if possible.

Methods and analysis: A systematic meta-review will be conducted in accordance with the Preferred Reporting Items for Systematic Reviews (PRISMA-P) and Joanna Briggs Institute umbrella review guidelines. Electronic searches of general databases, especially Web of Science, Scopus, and PubMed, will be conducted. Only results from January 2020 onwards will be considered, coinciding with the COVID-19 pandemic. Only results in English will be included. Descriptive statistics, thematic analysis, and narrative summaries describing the nature of the reviewed work and evaluation of psychological resilience strategies will be carried out.

Ethics and dissemination: Ethical approval is not needed for systematic review protocols. The results of the meta-review will be published in an international peer-reviewed journal. The raw and summarized data will be shared in the journal or other open venues.

PROSPERO registration number: CRD42021235288

Article summary

Strengths and limitations of this study

1. The protocol was crafted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Protocols (PRISMA-P) guidelines.
2. The protocol was designed to be replicable and comprehensive, involving keywords and descriptors that are highly similar or relevant to psychological resilience so that multiple disciplines can be searched and a variety of measures can be assessed.
3. The protocol was designed to evaluate the quality of review work conducted during COVID-19, and so is not limited to systematic reviews and meta-analyses.
4. Limiting the inclusion criteria to papers that include the key term “psychological resilience” in the abstract may lead to potentially relevant papers being missed.
5. Limiting the inclusion criteria to English papers may lead to language bias.

Introduction

The COVID-19 global pandemic has been a disruptive force across many areas of life. In healthcare, mental health and psychological well-being has emerged as a key topic [cf. 1–4]. Most nations have strongly recommended or enforced social distancing, self-quarantine, and physical isolation, all interventions that have known or predicted impacts on psychological well-being [5]. This has subsequently raised the issue of how to measure, manage, and prevent, if possible, negative outcomes, ranging from anxiety to depression to suicide [1–3,6–9]. Psychological resilience is defined as positive adaptability or the ability to "bounce back" when confronted with new and especially negative situations involving adversity, stress, and trauma [10–12]. In a global pandemic such as COVID-19, the degree to which populations achieve psychological resilience, and how, may be essential for combating comorbidities related to psychological well-being. In assessing the impact of psychological resilience on the impact of COVID-19 on mental stress and mental well-being, results of different studies may be systematically biased by the target populations they observe. Socio-economic status [13] and cultural factors [14], among others may all impact the role of psychological resilience in moderating the impact of COVID-19 stressors.

One way to assess the state of affairs while taking account of factors such as quality and bias in review work is through a meta-review process. Meta-reviews, also called umbrella reviews or overviews of reviews, are systematic reviews of existing survey work that aim to generate clarity and consensus on a certain topic or research question [15,16]. A key aspect of meta-reviews is an assessment of quality of the review work conducted [15,17,18]. The intended beneficiaries are the academic community, the public at large, and especially decision-makers. Typically, meta-reviews summarize survey work that represents the highest level of evidence achievable: systematic reviews and meta-analyses of primary studies [15]. Yet, COVID-19 has created a special situation in which there is an urgent demand for answers as well as greater flexibility in what gets published [19]. This "paperdemic" is raising serious questions about scientific integrity during COVID-19 [19]. We expect that the body of review work on psychological resilience is no different: that it has and will be subject to the same pressures of time and demand. Indeed, a cursory review of the literature that purports to synthesize prior research shows that much of the work cannot be classified as systematic reviews or meta-analyses. Yet, as citation counts and news coverage indicate, we are relying on this body of work to understand the state of affairs and make decisions about healthcare. As such, the effects of the COVID-19 situation on research practice needs to be acknowledged and integrated into meta-review protocols. This means expanding the purview of meta-review protocols to include other kinds of survey work beyond systematic reviews and meta-analyses. Additionally, protocols must assess the quality of the methods used, summarize the state of the art, and generate consensus for healthcare decision-making.

To this end, the goal of this meta-review protocol is to provide a means of systematically surveying the previous and emerging review work, broadly defined, on psychological resilience published during COVID-19. A two-pronged approach is provided: (1) describe the nature and quality of this body of work and (2) summarize the findings on the strategies that have been deployed to assess, maintain, and encourage psychological resilience during COVID-19. The results of conducting this protocol will help us understand the state of the literature methodologically as well as summarize the findings for building knowledge and taking action.

Methods and analysis

Objectives

The goal is to assess the nature and quality of survey work on the topic of psychological resilience, and to summarize findings on the strategies that have been deployed to assess, maintain, and encourage psychological resilience during COVID-19. Two research questions follow from this: (RQ1) What is the nature and quality of the survey work published on this topic? (RQ2) What consensus can be derived from the survey work on strategies used to assess, encourage, and/or maintain psychological resilience during COVID-19? In answering these questions the following objectives will be met: (1) identification of review work on the topic of psychological resilience during COVID-19; (2) assessment of the quality of this body of work; (3) assessment of the risk of bias in this body of work; (4) generation of a narrative summary of the key points, strengths, and weaknesses revealed by this body of work; (5) identification of the psychological resilience strategies that have been reviewed; (6) assessing the effectiveness of these strategies; (7) identification of outcomes; and (8) summarization of the findings so far, with recommendations where possible.

Study design

The meta-review protocol will be conducted in line with the Preferred Reporting Items for Systematic review and Meta-analysis Protocols (PRISMA-P) guidelines [20], with additional guidance for meta-reviews according to Aromataris et al. [15].

Search strategy and information sources

Scopus, Web of Science, and PubMed, the standard general and broad-indexing databases, will be searched in June 2021. Only peer-reviewed English language publications (e.g., not papers posted to archival websites or grey literature) will be included. Preliminary searches were conducted on January 16th and 19th, 2021 to test the initial queries and keywords as well as to generate a first look at the state of affairs. See Table 1 for the full search queries.

Table 1. Search queries

Database	Metadata	Query	Filters
Web of Science	Topic (TS)	(AB=resilien* AND TS=(resilien* OR psycholog* OR personal* OR positiv* OR "cope" OR "coping" OR "personal strength") AND TS=((covid OR covid-19 OR coronavirus OR Sars-Cov-2) AND ("literature review" OR "systematic survey" OR "systematic review" OR "rapid review" OR "literature survey" OR "review article" OR "survey article" OR "meta-analysis" OR "living review" or "mapping review" or "qualitative evidence	Year (2020, 2021), Language (English), Doctype (Article, Book, Book Chapter, Early

		synthesis" or "scoping review" or "state-of-the-art review" or "systematized review" or "narrative review" or "comprehensive review"))) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article OR Book OR Book Chapter OR Early Access OR Proceedings Paper)	Access, Proceedings Paper)
Scopus	Article title, Abstract, Keywords	(TITLE-ABS(resilien*) AND (TITLE-ABS-KEY(psycholog*) OR TITLE-ABS-KEY(personal*) OR TITLE-ABS-KEY(positiv*) OR TITLE-ABS-KEY(cope) OR TITLE-ABS-KEY(coping)) OR TITLE-ABS-KEY("personal strength")) AND (TITLE-ABS-KEY(covid) OR TITLE-ABS-KEY(covid-19) OR TITLE-ABS-KEY(coronavirus) OR TITLE-ABS-KEY(sars-cov-2)) AND (TITLE-ABS-KEY("literature review") OR TITLE-ABS-KEY("systematic survey") OR TITLE-ABS-KEY("systematic review") OR TITLE-ABS-KEY("rapid review") OR TITLE-ABS-KEY("literature survey") OR TITLE-ABS-KEY("review article") OR TITLE-ABS-KEY("survey article") OR TITLE-ABS-KEY("meta-analysis") OR TITLE-ABS-KEY("living review") OR TITLE-ABS-KEY("mapping review") OR TITLE-ABS-KEY("qualitative evidence synthesis") OR TITLE-ABS-KEY("scoping review") OR TITLE-ABS-KEY("state-of-the-art review") OR TITLE-ABS-KEY("systematized review") OR TITLE-ABS-KEY("narrative review") OR TITLE-ABS-KEY("comprehensive review"))))	Year (2020, 2021), Language (English)
PubMed	Title/Abstract, Text Word	((resilien*[Title/Abstract] AND (resilien*[Text Word] OR psycholog*[Text Word] OR personal*[Text Word] OR positiv*[Text Word] OR cope[Text Word] OR coping[Text Word] OR "personal strength"[Text Word]) AND (SARS-CoV-2[Text Word] OR COVID-19[Text Word] OR Coronavirus[Text Word]) AND ("literature review"[Text Word] OR "systematic survey"[Text Word] OR "systematic review"[Text Word] OR "rapid review"[Text Word] OR "literature survey"[Text Word] OR "review article"[Text Word] OR "survey article"[Text Word] OR "meta-analysis"[Text Word] OR "living review"[Text Word] OR "mapping review"[Text Word] OR	Year (2020, 2021), Language (English)

		"qualitative evidence synthesis"[Text Word] OR "scoping review" [Text Word] OR "state-of-the-art review"[Text Word] OR "systematized review"[Text Word] OR "narrative review"[Text Word] OR "comprehensive review"[Text Word]))	
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Eligibility criteria

Study design

All types of systematic research surveys will be included. Relevant terms are included in the search keywords based on the typology created by Grant and Booth [21]. Unpublished papers will be excluded.

Condition or domain being studied

Survey work on psychological resilience during COVID-19, involving the general population or specific subsets, and reporting on strategies for assessing, encouraging, and/or maintaining psychological resilience during COVID-19, will be included. Survey work before COVID-19 or excluding COVID-19 will not be included. All strategies, whether proposed or evaluated, whether during COVID-19 or prospectively applied to COVID-19, will be included. Survey work that does not feature psychological resilience or adjacent topics, e.g., personal strengths, positive functioning, coping strategies, etc., will be excluded.

Setting

Only work conducted on the COVID-19 pandemic will be included. However, we will evaluate whether or not the surveyed reviews include work from before the pandemic.

Time frame

A date range of January 2020 and May 2021 will be set, coinciding with the start of COVID-19 up until the start of the planned query searches.

Selection process

One researcher will run the search queries. The researcher will then extract the results to Zotero, a reference management software, and screen the results by applying the inclusion/exclusion criteria based on the title and abstract. Two researchers will then independently rate the quality of the surveys using A Measurement Tool to Assess systematic Reviews (AMSTAR 2) [22]. Inter-rater reliability testing using Cohen's Kappa statistic will be used. Disagreements will be discussed and re-assessments will take place until a Kappa value of .80 or above is achieved

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2
3 between the ratings of the two researchers. A third researcher will be involved as a tiebreaker in
4 the case of unresolvable disagreements between the two researchers. Papers that were mistakenly
5 included in the first step or are of poor quality (3 or less) will be excluded. Google Sheets,
6 Covidence, and/or SRDR+ will be used to track and record decisions and ratings and their
7 analysis.
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9

10 **Data collection and extraction process**

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13 Three researchers will divide the corpus of papers and extract the data independently, but within
14 the same shared spreadsheet/database. Extracted data will include: citation details, objectives,
15 type of survey, participant demographics, setting and context, number of databases sourced and
16 searched, date range of database searches, publication date range of studies, number of studies,
17 types of studies, country of origin of studies, study quality assessment tool used, quality ratings
18 of studies, outcomes reported, method of synthesis/analysis/narrative, measures and instruments
19 related to RQ2, assessment of these measures, effect sizes with confidence intervals, thematic or
20 content frameworks, major findings. Missing data will be marked with a dash. Google Sheets,
21 Covidence, and/or SRDR+ will be used to record the data.
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24 **Outcomes**

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27 Several outcomes are expected for RQ1. A description of the nature of surveys conducted will be
28 produced. An assessment of the quality of the body of work using the AMSTAR 2 tool [22] will
29 be provided. An assessment of the risk of bias across studies identified will be generated using a
30 funnel plot of effect size over standardized mean differences plus a measure of heterogeneity, as
31 per the Cochrane PRISMA guidelines [23]. Finally, a narrative summary of key features,
32 including strong points and weaknesses across the body of work, will be derived. Next steps will
33 be presented in the form of a research agenda.
34
35

36
37 For RQ2, any findings related to the evaluation of psychological resilience strategies will be
38 summarized quantitatively or in narrative form. Measures could include standardized mean
39 differences (continuous variables), odds ratios (dichotomous variables), descriptive statistics for
40 tests of internal and external reliability (e.g., Cronbach's alpha), thematic or content analyses of
41 qualitative data, and more. We will use standard statistics software, such as SPSS, R, and
42 Microsoft Excel, to conduct these analyses.
43
44

45 **Risk of bias (quality) assessment**

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47
48 The ratings resulting from the application of the AMSTAR 2 tool [22] during the study screening
49 phase will be used to assess the quality of each included survey and the overall quality of the
50 body of survey work. The ratings will be processed in line with Natto and Hameedaldain [24],
51 i.e., converted to numbers and summed. Where discrepancies in ratings occur, the average
52 (mean) score between raters will be used.
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Data analysis and synthesis

In line with Aromataris et al. [15], we will analyze and synthesize the quantitative and qualitative data separately, per each of our meta-review research questions.

To answer RQ1, we will provide descriptive statistics on the nature of the surveys, including means, medians, standard deviation, and interquartile ranges for all quantitative variables. We will use t-tests to check if gender and other key demographics or variables were equally distributed. For quality, we will categorize the scores from the AMSTAR 2 tool according to the quality categories provided by Shea et al. [22]. We will then take a random selection of other pre-COVID meta-reviews that used the AMSTAR 2 and compare the distribution across categories with our data set.

To answer RQ2, we expect diverse research data, so we will divide the findings by quantitative and qualitative data reported. Quantitative data will then be summarized based on variable, measures, effect sizes, and outcomes. Where possible, we will do meta-analyses. Qualitative data will be summarized in narrative form based on phenomena of interest.

Patient and public involvement

No patient or public involvement is planned. However, the raw and summarized data will be made available after publication.

Ethics and dissemination

No ethics review process was necessary for this work. We do not foresee any safety issues related to this work. We will publish the results of this protocol as a complete meta-review paper in an international peer-reviewed reputable academic journal. We will provide the extracted and summarized data in spreadsheets or similar formats through the journal and/or our institutional repositories, non-for-profit research archives, and/or our personal websites.

Discussion

Meta-reviews are urgently needed as the COVID-19 global pandemic continues to play out. We must understand the state of affairs in research survey work as well as the state of the art on healthcare topics. COVID-19 is the first global pandemic in the modern communications era, meaning that it is also the first where the impacts of social distancing and other interventions have been moderated to some extent by digital technologies. Many of the impacts of COVID-19 appear to be similar across a broad range of countries, with responses such as anti-mask and anti-lockdown protests occurring across diverse societies and cultures. The stressors created by COVID-19 have been many and varied, testing the resilience of people in different contexts. Examples include people sheltering at home, young people who have had their social lives curtailed or schooling impaired, older people who have become more isolated and perhaps even “imprisoned” in residences or care homes, essential workers who are exposed to COVID-

19, long-haulers, and front-line workers. Each of these COVID-19 contexts offer unique, perhaps “once in a century” opportunities to study resilience in different contexts on a global scale.

The proposed overview of reviews we have described in this paper will capture a snapshot of how resilience has been studied in the time of COVID-19. It is characterized by a reproducible procedure, including descriptions of data sources, search strategy, and data extraction methods. Thus, we have contributed a comprehensive and replicable meta-review protocol on a timely and vital topic—psychological resilience—that will serve to capture and critically evaluate the quality of review work as well as generate a synthesis of health outcomes and potentially recommendations across fields of study and modes of practice. The meta-review is expected to provide consensus on outcomes and provoke a more comprehensive, critical view of survey work during the pandemic.

Author contributions

All authors made substantial contributions to the work. KS led the design of the protocol and drafted the paper. MC contributed to the protocol design, focusing on the data analysis portion and selection of the quality assessment instrument. JG contributed to the protocol design, focusing on the keywords and query design. MC critically reviewed and refined the draft. All authors sourced references. All authors confirmed the paper before submission.

Competing interests

None declared.

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Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preorting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	2
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	2
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	8

Amendments

	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
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Support

Sources	#5a	Indicate sources of financial or other support for the review	9
Sponsor	#5b	Provide name for the review funder and / or sponsor	9
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	n/a

Introduction

Rationale	#6	Describe the rationale for the review in the context of what is already known	3
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4

Methods

Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	6
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	4
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	4
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	6
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	6
Study records - data	#11c	Describe planned method of extracting data from reports (such as	7

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1	collection process		piloting forms, done independently, in duplicate), any processes for	
2			obtaining and confirming data from investigators	
3				
4	Data items	#12	List and define all variables for which data will be sought (such as	7
5			PICO items, funding sources), any pre-planned data assumptions and	
6			simplifications	
7				
8				
9	Outcomes and	#13	List and define all outcomes for which data will be sought, including	7
10	prioritization		prioritization of main and additional outcomes, with rationale	
11				
12				
13	Risk of bias in	#14	Describe anticipated methods for assessing risk of bias of individual	7
14	individual studies		studies, including whether this will be done at the outcome or study	
15			level, or both; state how this information will be used in data synthesis	
16				
17				
18	Data synthesis	#15a	Describe criteria under which study data will be quantitatively	8
19			synthesised	
20				
21				
22	Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned	8
23			summary measures, methods of handling data and methods of	
24			combining data from studies, including any planned exploration of	
25			consistency (such as I ² , Kendall's τ)	
26				
27				
28				
29	Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or	n/a
30			subgroup analyses, meta-regression)	
31				
32				
33	Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of	8
34			summary planned	
35				
36				
37	Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication	n/a
38			bias across studies, selective reporting within studies)	
39				
40				
41	Confidence in	#17	Describe how the strength of the body of evidence will be assessed	8
42	cumulative		(such as GRADE)	
43	evidence			
44				
45				

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