

The impact of cash transfers on subjective well-being and mental health: a systematic review protocol

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Abstract

Background: A large body of evidence evaluates the impact of cash transfers (CTs) on physical health and economic well-being. The recent growth in interest in subjective well-being (SWB) and cost-effectiveness analysis of development interventions raises the possibility of comparing the impact of an intervention such as CTs across domains of well-being. A growing amount of research on CTs contains measures of mental health (MH) and SWB but no attempt has been made to explicitly synthesize such work.

Objectives: The aim of this study is to undertake a systematic review to assess the impact of CTs on subjective well-being and mental health.

Methods/design: We will undertake a systematic review of published and unpublished literature of CTs' impact on SWB and MH over the period 2000-2020; quantitative and qualitative studies will be considered for inclusion in the review. We will consider all study designs except case studies. Studies included in the review will be analysed by narrative synthesis and / or meta-analysis depending on the nature of the data retrieved. Quantitative studies will be considered for inclusion in any meta-analysis; an emphasis will be placed on those with experimental or quasi-experimental identification strategies.

Discussion: This review will provide empirical evidence on the impact of CTs on SWB / MH to inform CT policy, implementation, and research. This protocol follows the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P).

Systematic review registration: We intend to register this protocol with PROSPERO.

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Background

Cash transfers (CTs), are among the most extensively studied⁴ and implemented⁵ interventions in low- and middle-income country settings (Vivalt, 2016). Previous research on CTs has focused on outcomes related to material poverty (Agostini & Brown, 2007; Araujo et al., 2016; Cuesta, 2007; Ibrahim & Yeboah, 2014; Villa & Niño-Zarazúa, 2019), human capital (Amarante et al., 2013; Baird et al., 2013; Barham et al., 2017; Cardoso & de Souza, 2009; Filmer & Schady, 2011; Peruffo & Ferreira, 2017), health service utilization (Akresh et al., 2012; Gaarder et al., 2010; Glassman & Todd, 2007; Lagarde et al., 2007; Oduenyi et al., 2019), and physical health (Behrman & Parker, 2010; Crea et al., 2015; Huang, 2016). While there has been some investigation on the role of CTs on mental health (Owusu-Addo et al., 2018), this has not been explicitly explored systematically.

Since the Sarkozy report (Stiglitz et al., 2009), there has been an increasing interest to include measurements of progress beyond income and GDP (Rojas, 2016)⁶, exemplified by the World Happiness Reports (Sachs et al., 2018). This is particularly salient if such measurements dramatically change our policy priorities⁷. While there has been a growth in policy-relevant SWB research (Diener et al., 2018; Frijters et al. 2019), there have been few clear attempts to synthesize it. This review aims at addressing part of this gap

by assessing how CTs can provide a causal interpretation to the income-SWB relationship.

There is an ongoing debate about whether increases in a country's GDP *per capita* result in increased average reports of subjective well-being (Easterlin, 1974, 1995, 2016, 2016; Kaiser & Vendrik, 2019; Stevenson & Wolfers, 2008). The possible absence of such a link in rich countries is typically referred to as the "Easterlin Paradox". Nevertheless, evidence of the individual-level relationship between income and SWB⁸ robustly supports the view that an increase in income strongly benefits the well-being of those with low levels of income or wealth (Clark, 2017; Deaton, 2008). Due to the mostly correlational nature of the income-SWB relationship⁹ there has been a demand for causal interpretations. CTs can provide a causal interpretation to the relationship.

A further motivation is to understand the impact CTs have on mental health. Mental and addictive disorders form between 7% and 13% (Vigo et al., 2019) of the global disease burden and their relative share has grown in recent years¹⁰ (Rehm & Shield, 2019). Mental health (MH) issues appear particularly neglected for low- and middle-income countries. Spending as measured by share of governmental health budgets¹¹ (0.5 - 2.4%) (Vigo et al., 2019) or share of international assistance directed at health (0.3%) (Liese et al.,

⁴ The other most studied interventions are micro-nutrient and deworming programs (Vivalt, 2016).

⁵ "Of 142 countries in the ASPIRE administrative database, 70 percent have unconditional cash transfers and 43% have conditional cash transfers." (Ivaschenko et al., 2018)

⁶ Prominent figures such as Richard Layard argue that well-being should be the goal of government and SWB is the measure of well-being that should be used for making policy decisions (Frijters et al., 2019).

⁷ For instance, Schimmel (2009) finds that the rankings of countries dramatically change between the United Nations measures of human development (HDI) and SWB.

⁸ Although the term happiness is often used as a generic term for well-being – see Diener (2009) - most studies investigating the relationship between income and SWB make use of life satisfaction, which may be quite dissimilar from happiness.

⁹ Lindvist et al.'s paper (2018) on the long-term effects on SWB from winning a Swedish lottery is one recent exception.

¹⁰ Although this may be due to changes in demographic characteristics (Richter et al., 2019).

¹¹ "Low-income countries spend around 0.5% of their health budget on mental health services, lower-middle-income countries around 1.9%, upper-middle-income countries 2.4%, and high-income countries 5.1%." (*WHO | Mental Health ATLAS*, 2017)

2019) appears disproportionately small compared to disease burden.

We treat subjective well-being and mental health as at least somewhat overlapping constructs. We expect mental health measures to be closely related to the negative affect¹² element of SWB. Both MH and SWB often consist of self-reported judgements about individual's own lives, but MH measures often differ by asking about physical behaviours and habits. MH measures also appear to be more common in the development literature.

Both MH¹³ and SWB are potentially more direct measures of well-being than traditional proxies such as wealth or education. Although a debate continues about whether SWB can replace traditional measures of progress in policy analysis, they are at least a valuable complement (Benjamin et al., 2019).

Description of types of intervention considered: Cash transfers come in the form of unconditional cash transfers (UCTs) or conditional cash transfers (CCTs). Social pensions, enterprise grants (Bastagli et al., 2016) and payments for ecosystem services (PES) (Arriagada et al., 2015; Blundo-Canto et al., 2018), while technically classifiable as CCTs or UCTs, differ from other CTs because they are often not targeted exclusively at the extreme poor.

¹² There are normally two dimensions of SWB considered, the emotional and cognitive (or experienced / evaluative), with the emotional or affective dimension separable into positive and negative components (Busseri & Sadava, 2011). Compared to SWB measures, MH measures often include more numerous but narrower instruments that focus on negative aspects of experience.

¹³ As the WHO notes: "Mental health is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community (Herrman et al., 2005)."

Conditional cash transfers require adherence to certain actions, such as school enrolment or vaccination. Whether recipients meet conditions is intended to be verified but sometimes left unmonitored due to high administrative costs (Davis et al., 2016). The strictness of such conditions may vary due to differences in design and implementation of the interventions¹⁴. Enterprise grants are normally one-time transfers specifically to aid in the starting or running of a small business. We consider payments for ecosystem services¹⁵ (PES) and enterprise grants to be CCTs.

Unconditional cash transfers (UCTs) have no requirements. Non-contributory social pensions will be considered as part of this category.

Most CTs are run by governments or NGOs. CTs pay-out in lump-sums or streams. Some stream or multi-instalment CTs have graduation mechanisms, (Sabates-Wheeler et al., 2018; Villa & Niño-Zarazúa, 2019) while others are more permanent fixtures of a welfare system. Often, they are targeted to a vulnerable subset of the population, defined either by region or community selection. Some CTs are bundled with other services such as asset transfers or expertise¹⁶.

Measures of SWB / mental health: For the purposes of this review, we define subjective well-being as *individuals' ratings of how they feel about and during their lives*¹⁷. In this vein, we

¹⁴ There are some "soft conditions" which appear more akin to nudges. They carry a label which suggests a use for the cash received. There is evidence this has some impact on how it is spent (Pace et al., 2019).

¹⁵ These are incentives to farmers or landowners to provide ecosystem services on their land, e.g., by not cutting down a section of rainforest.

¹⁶ One may argue that the condition element of CCTs is a service (commitment device). We will not treat it as such.

¹⁷ This is our definition. Other definitions of SWB include: "the field ... in which people's evaluations of their lives are studied" (Diener, 2009) or SWB

will attempt to evaluate whether CTs influence SWB, including self-reported MH measures which fit this definition. While our definition of SWB includes MH measures, this is not common practice so we discuss them jointly throughout. See Tables 1 & 2 for a list of includable instruments.

How CTs might work to affect mental health (MH) and SWB: Mental illness and poverty are linked as commonly concurring conditions and causes of one another (Allouche, 2019; Clark, 2017; Enns et al., 2019; Green et al., 2016; Karimli et al., 2019; Tampubolon & Hanandita, 2014). Poverty alleviation may improve MH because poverty is psychologically taxing (Schilbach et al., 2016). Mental health problems engender and perpetuate poverty because they may lead to risk averse and short sighted decision making (Haushofer & Fehr, 2014).

However, there are concerns that the gains in the recipient of the cash transfers will be offset by negative externalities to neighbours or other comparators (Haushofer et al., 2015). One mechanism for this is that recipients may “leapfrog” the poorest individuals who did not receive the CT causing resentment (Ellis, 2012); this is a special case of comparison effects¹⁸. While Egger et al. discuss other spillovers such as crime and inflation¹⁹ which are relevant if CTs are widely implemented (2019), we consider these second order spillovers that will indirectly

“reflects an overall evaluation of the quality of a person’s life from her or his perspective.” (Diener et al, 2018).

¹⁸ While comparison and relative income effects are considered more of a problem in high-income countries research has suggested their presence in developing contexts (Anderson et al., 2012; Howell & Howell, 2008).

¹⁹ Egger et al. find: that consumption in untreated households increases (likely as a result from local income gains); no significant impact on PWB; a significant but less than 1% impact on inflation; and positive, null, or not negative impacts on domestic violence, child education, nutrition and health, crime, and public goods (2019).

affect SWB / MH. We will be focusing our review on first order spillovers, such as direct proxies of comparison effects.

Why it is important to do this review:

1. There has been a growing demand for causal interpretations of the income-happiness relationship. Cash transfers provide an opportunity to measure it.
2. To inform the growing interest in the policy relevance of SWB, it is necessary to systematically analyse the existing evidence on the comparative effects of different SWB related interventions. In general, few systematic reviews have been done to synthesize the impact of various policy interventions on SWB²⁰. There has been no systematic review focused primarily on the impact of CTs on mental health and subjective well-being²¹.

Objectives / the review question: (i) Primary question: How do cash transfers affect the SWB / MH of their recipients in low- and middle-income countries? (ii) Secondary question: Are there spillovers of CTs (within the household and community) which mitigate or enhance the total impact on SWB / MH?

Methods / design

Inclusion criteria

Types of studies: To answer question (i) we will be considering experimental, quasi-experimental,

²⁰ This will depend on how broad your conception is of ‘policy interventions’. For cursory consideration of meta-analyses that use SWB or MH measures, see Topic 1 of the appendix.

²¹ Since most cost-effectiveness estimates are done in terms of currency, estimating the effects of CTs on SWB seems like a natural starting point and yardstick for an entity concerned with finding how different interventions impact SWB.

and pre- and post-cross-sectional studies²², given sufficient methodological quality. To answer question (ii) we will consider both qualitative and quantitative studies. All work included must be primary research. Secondary research such as systematic reviews may be used to identify further relevant studies.

Types of participants: Inhabitants of lower- to middle-income countries (LMICs)²³. In practice this means we will exclude studies that occur in higher income countries²⁴. We expect the population to be primarily from the lower quartile of the income distribution in a country, as these are the populations most often targeted by CTs. We will not exclude studies of interventions based on the age, gender or other unstated observable characteristics of its participants.

Types of interventions: Our interest is in how cash transfers affect SWB broadly; therefore, we will consider CCTs, UCTs, non-contributory pensions and enterprise grants on the condition that they are implemented and tested independently of other services that could confound our results.

Types of comparators: We will include no restriction on comparators or control groups used, although we expect to emphasize control groups which are provided no treatment.

Primary outcomes: (a) Measures of subjective well-being (broadly defined) such as life satisfaction, happiness, and optimism. (b) Measures of mental health, such as depression or anxiety, which deal with emotions and/or life evaluations (rather than physical symptoms and behaviors). We will consider both measures of

psychological well-being (PWB)²⁵ and SWB as relevant as they show a high latent correlation (Disabato et al., 2016)²⁶.

Secondary outcomes: To answer our secondary question we will include proxies of household and community level spillovers such as social cohesion, social connectedness, trust in social institutions, trust in neighbours and intimate partner violence (IPV)²⁷.

Search Methods

We will limit the search to studies in English, German, Danish, Swedish, Norwegian, Spanish, French, or Portuguese and the time span from 2000²⁸ to 2020. We will include both published and unpublished studies to mitigate publication bias. We will keep and provide a “search log” documenting our process and include it as an additional file. This is to ensure that the review methods are transparent.

Our general search string is as follows²⁹:

(Cash transfer OR "non-contributory pension*" OR "enterprise grant*") AND ((satisfaction OR depression OR happiness OR "mental health" OR mental OR happy OR "subjective well-being" OR eudai* OR "subjective well*" OR subjective OR "self report*" OR SWB OR emotion* OR "positive emotion*" OR "negative emotion*" OR anxiety OR stress OR "positive affect" OR affective OR "negative affect" OR PHQ OR PHQ-9 OR SWLS OR GHQ OR GHQ-12 OR CES-D OR PERMA OR K10) OR*

²⁵ Chen et al. (2013) describes PWB as emphasizing the eudaimonic aspect of well-being (goals & growth), while SWB emphasizes the hedonic aspect (pleasantness) but both take the subjective nature of well-being for granted and broadly overlap.

²⁶ That is, they have low discriminant-validity coefficients and therefore show no discriminant validity.

²⁷ As evidence of spillovers of CTs, IPV will not be included in search due to a pre-existing review of the subject (Buller et al., 2018).

²⁸ Impact evaluations of CTs began around this time, so we consider 2000 a reasonable lower bound of the search time frame.

²⁹ We will search full texts by default.

²² We do not think it is likely we will include cross-sectional studies in our meta-analysis, but we will not exclude them outright in our search.

²³ This is because we are interested in informing global development interventions.

²⁴ Countries that have, as the [World Bank](#) posits as of 2020, a GNI of more than \$12,375 such as the USA or France.

(*trust OR "social cohesion" OR "social bonds" OR "interpersonal trust" OR "social capital" OR "community building"*)³⁰)

Electronic searches: The subject heading terminology and syntax of search terms will be adapted according to the requirements of the individual databases. We will use EBSCO to search all databases listed except Web of Science, JSTOR, Science Direct, Proquest and the gray literature sources: 3ie, EconPapers and IDEAS³¹.

Databases

Health and biomedical: MEDLINE, CINAHL, PsycINFO, PubMed, ScienceDirect.

Social Science: Social Sciences (ProQuest Collection), Sociological Abstracts, Social Sciences Citation Index (Web of Science), Web of Science, Business Source Complete, EconLit, Social Sciences Full Text (H.W. Wilson), APA PsychArticles, Psychology and Behavioral Sciences Collection, PAIS International.

Multidisciplinary: Scopus (1990 to present), Academic OneFile -- Academic Search Premier, JSTOR, Google Scholar

Gray literature: ProQuest Dissertations & Theses Database, [EconPapers](#), [Transfer Project](#), 3ie impact database and [IDEAS.Repec](#).

Internet search engines: Google Scholar will be used both for the initial search and to search for studies that cite or are related to studies that pass our final round of vetting.

³⁰ Terms we are intentionally omitting: "psychological" as in PWB, because it brings too many irrelevant results. Initially we considered including (increase income) | (income shock) | (cash transfer) | (wealth transfer) but cash transfer appears to be the only relevant search term needed. We are also omitting "well-being" alone as it increases false positive rate of search without any perceivable increase in true positives.

³¹ Both EconPapers and IDEAS index RepEc archives.

Other search methods: Besides electronic searches, we will manually search the citations of retrieved experiments, reviews, books, and institutional reports. Additionally, we will contact experts in the field concerning unpublished studies or otherwise any relevant work we missed. We also expect to identify relevant items and authors via "snowballing" techniques (Waddington et al., 2012). We will use included studies (or reviews) to identify other studies (or reference authors). Simultaneously, we will search for articles that cite a key reference.

Study selection and data extraction

Selection of studies: We will store all relevant records in the reference management system Zotero. Double-blind screening of the titles and abstracts will be done using the software Rayyan. Any disagreements will be discussed until consensus is reached. Two reviewers (JM & CK) will perform the initial screening by evaluating the title and abstract for its relevance to CTs, SWB, or health more broadly³². If a study passes initial screening, we will confirm the appropriateness of its study design by (i) searching its text³³ for use of a SWB metric, (ii) confirming that the metric is a variant of a commonly used and includable metric, and that the cash transfer is not bundled with other services.

Data extraction will be performed by JM and checked by ABM. We will resolve all

³² We will err on the side of inclusion if cognitive, behavioral, or a broad array of health outcomes are mentioned because mental health may be included as a secondary outcome.

³³ The text search will include the keywords: *psych, mental, well-being, subjective, emotional, satisfaction, happiness, happy, depression, anxiety, stress, quality of life, positive affect, negative affect*. If there are no results, then we test for the occurrences of a common word such as "data" or "conclusion". If our text search does not appear to be functioning as expected, we will search the study by hand.

disagreements by discussion until a consensus is reached.

Data extraction and management: We will follow the guidelines of Pedder et al. (2016) as well as the Cochrane Handbook Ch. 5 (Higgins & Green, 2011). Our form is adapted from the Cochrane Public Health group's template for data extraction. JM will perform the extraction, which will be iteratively reviewed by ABM. We will collect study details such as author name, country or countries where the study takes place, number of participants, outcomes measured, and the standardized effect size. If possible we will collect information on the size of the cash transfer, how many instalments it includes, its duration, the implementing agent of the cash transfer (government, NGO, or academics), the value of the currency used in PPP US dollars, the program the CT is a part of (e.g., Progresa / Oportunidades) and time between end of intervention and follow up. Additionally, we will retrieve factors relevant to the risk of bias assessment such as ITT versus ToT, survey attrition, funding source, or sample restrictions.

Risk of bias/quality assessment: We will assess risk of bias following the GRADE approach (Higgins et al., 2011). We will consider the implementing agent of the CT and whether that differs from the evaluator of the CT. We will assess the carefulness of the study in combination with its design as a C-RCT, RCT or quasi-experimental approach (regression discontinuity, propensity score matching, difference and difference). Following the GRADE approach, we will consider elements of the study design and execution that may contribute to selection bias, performance bias, detection bias, attrition bias, reporting bias or other sources of bias.

Measures of treatment effects: We will calculate standardized effect sizes. For dichotomous outcomes, we will calculate an odds ratio. For continuous outcomes, we will use

standardized means difference (Hedges' d) to limit small sample bias (Lin, 2018). Following Hamman et al. we will weight based on sample size to reduce risk of bias (2018). For studies reporting correlation coefficients, we will compute Fisher's z (Borenstein et al., 2011).

Dependent effect sizes: If multiple outcomes are measured on a common set of participants, we will collect data for the two broadest measures of SWB and MH and a composite measure of SWB and MH for a total of five effect sizes per study.

Since the authors know of no clear precedents to follow in terms of aggregating psychological instruments, we intend to illustrate several theoretically plausible approaches to aggregation and conduct a sensitivity analysis to see how much, if at all, the results differ between distinct approaches.

If outcomes are measured at multiple follow-up times, we will collect effect sizes for each follow up and, if possible, note the time since the CT started and ended in order to estimate adaptation effects. If there are multiple treatment conditions compared to a common control, such as UCT versus CCT, then we will aggregate the effect sizes weighted on sample size. If there are multiple specifications of controls we will extract the relevant coefficient from the model with no controls and full controls.

If within a single paper there are multiple studies, e.g., Banerjee, et al. (2015), we will use a multi-level model³⁴ to account for dependence.

If there are multiple papers written on the same study sample, we will extract the results from the latest follow-up. If they vary on another

³⁴ Multilevel models allow one to handle nested data structures i.e., combine studies where the responses occur at different levels of the data hierarchy within a single model (Goldstein et al., 2000). This affords one to better account for study characteristics that may explain heterogeneity between studies.

dimension than time, we will choose the most relevant (in terms of outcomes) and methodologically rigorous study. We will collect information about program names and funding to assist in linking studies and ultimately include one effect estimate per study.

Unit of analysis: There will be no restriction according to the unit of analysis, although we expect the unit of analysis to be the individual in most studies.

Dealing with missing data: If the necessary data to create a standardized measure of effect size is unavailable, we will contact the authors up to three times to retrieve such information.

Data synthesis

Quantitative analysis and synthesis: We will conduct meta-analyses for studies whose outcome measures are plausibly comparable.

Aggregation of Psychological Instruments: We will not attempt to aggregate scales that only emphasize a single emotion such as optimism, but we will consider aggregating instruments that capture evaluations of many emotions and so plausibly give an overall picture of how life is going. The scope of the sensitivity analysis will include (i) a re-run meta-analysis with only studies assessed to be of a low risk of bias, (ii) a re-run of the meta-analysis under several different plausible techniques to aggregate SWB and MH metrics following A) precedence and B) different priors in different instruments of SWB, and (iii): if possible, to assess the influence of study design and data quality.

Assessment of heterogeneity: If a meta-analysis is possible, then statistical measures of heterogeneity of effect will be used, via Q test and the I^2 index (Huedo-Medina et al., 2006).

Moderator analyses: If sample size permits, we will perform subgroup analysis on the available observable characteristics, such as differences between CT and UCT, or regions (e.g., sub-Saharan Africa versus Latin America).

Assessment of publication biases: If a meta-analysis is possible then we will use a funnel plot and Egger's test to assess publication bias (Peters et al., 2006).

Qualitative analysis and synthesis: We will analyse the qualitative research following the principles of thematic synthesis. Themes identified in the qualitative studies will be used to complement the findings of the quantitative studies.

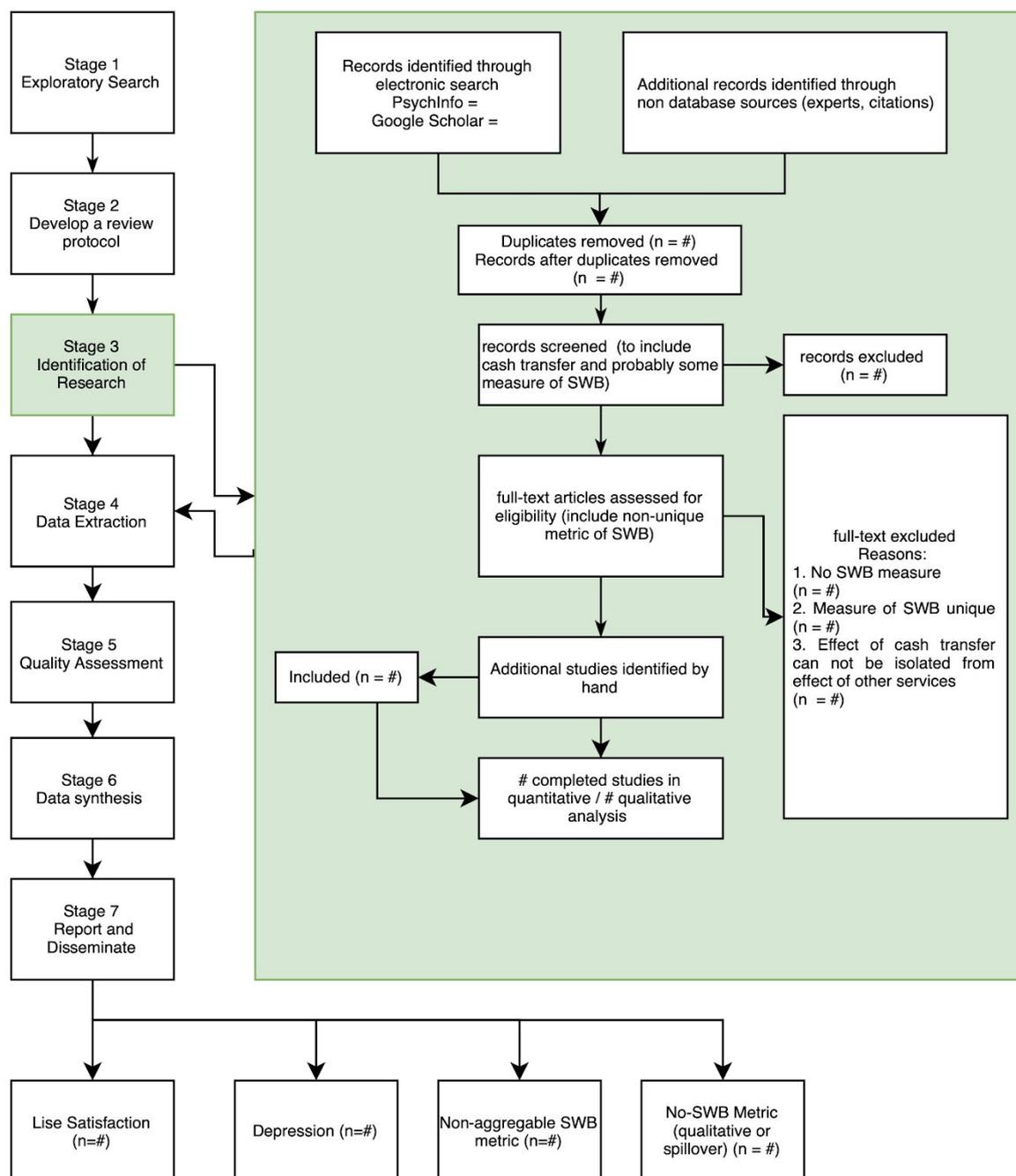
External validity: If we perform a meta-analysis, we will compare effect sizes to findings in the adjacent literature as a "sanity check". We conceptualize the adjacent literature as including any study of the effect of exogenous shocks to income on SWB.

Discussion

Dissemination plans: Publish in an open access journal.

Study registration: Register at PROSPERO

Figure 1: Super PRISMA Diagram -- A graphical overview of the systematic review process.



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Appendix

Topic 1: How do existing meta-analyses aggregate metrics of subjective well-being and mental health?

Following Luhmann et al. (2012) and White et al. (2017) one could assume that most widely used scales of depression such as the CES-D (Radloff, 1977) and K10 are aggregable with measures of life satisfaction and other broad evaluations of life. This could be justified by some research that suggests metrics of well-being that appear quite different, e.g., life satisfaction and PERMA, have a high latent correlation (Goodman et al., 2018). However this view appears to be uncommon if the examples below are any indication of convention. Most researchers appear to take a more cautious approach in the aggregation of SWB and MH metrics.

- Ngamaba et al. (2018) restrict SWB to mean affect and life satisfaction
- Klug and Maier specified “Research reports had to contain a valid measure of SWB. Studies were included if they operationalized SWB as life satisfaction (e.g., Bak and Brandtstadter 1998; Oishi and Diener 2001), current state of positive or negative affect (e.g., Koestner et al. 2002; Wiese 2004), domain specific satisfaction focused on the health (e.g., Boersma et al. 2006), relationship (e.g., Brunstein et al. 1996), and work domains (e.g., Pomaki 2003), or a conglomerate of cognitive and affective SWB components (e.g., Sheldon and Hoon 2007; Smith et al. 2007).” (2015)
- Martín-María et al. included eudaemonia but not depression (along with LS and affect) (2017). Howell & Howell say, “Because high ratings of happiness, life satisfaction, and positive affect all indicate high levels of subjective well-being, we will treat each construct as a variant of subjective well-being and will use SWB as a generic term to describe any facet of subjective well-being.” (2008)
- Bolier et al. included measures of SWB, PWB and depression but only aggregated within these measures (2013). Ginis et al. included SWB and depression and *DID* aggregate the metrics, but also ran separately (2010).
- From these examples of SWB and MH meta-analyses, there is no clear precedence to follow from the literature in knowing the appropriate threshold for including a measure in aggregation.

Topic 2: SWB Metrics: We will include any and all but not necessarily *only* the following instruments. If, during the review, we include additional instruments we will create an additional table containing these instruments and explain why we included them.

Table 1: Well-being measures from Lenton et al. (2016). This list is not final and subject to expansion.

Instrument Name	ID ³⁵	Instrument Acronym
15D	1	15D
Beck Depression Index-2	10	BDI-2
Cantril Self-Anchoring Striving Scale	12	CL
Centre for Epidemiological Studies scale-Revised Depression	14	CESD-R
Chinese Happiness Inventory	15	CHI
Depression-Happiness Scale-Short	16	DHS-S
Emotional Well-Being Scale	17	EWBS
EUROQOL-5D-5L	18	EQ-5D-5L
Affect Balance Scale	2	ABS
EUROHIS-QOL	20	E-QOL
Affectometer 2	3	A2
Hospital Anxiety and Depression Scale	30	HADS
ICOPPE (Interpersonal, Community, Occupational, Physical, Psychological, and Economic well-being)	33	ICOPPE
Jarel Spiritual Well-Being Scale	36	JSWBS
Kellner, Symptom Questionnaire	37	KSQ
Life Satisfaction Questionnaire-9	40	LISAT9
Meaning in Life Questionnaire	41	MLQ
Mental Health MHC-SF Continuum-Short Form	44	MHC-SF
Mental Physical Spiritual Well-Being Scale	46	MPS
Multicultural Quality of MQLI Life Index	48	MQLI
Multidimensional MPQ Personality Questionnaire-Brief	49	MPQ
Multiple Affect Adjective Check List-Revised	50	MAACL-R
Older Adult Health and Mood Questionnaire	52	OAHMQ
Orientations to Happiness	54	OTH
Perceived Wellness Survey	56	PWS
Positive and Negative Affect Scale	61	PANAS
Positive Functioning Inventory	62	PFI-12
Profile of Mood States-Short	64	POMS2
Psychological General Well-Being Index	65	PGWB-S

³⁵ ID numbers 1-99 represent instruments identified in (Lenton et. al, 2016), numbers greater than or equal to 100 are from authors own compilation.

Public Health Surveillance Well-Being Scale	66	PHS-WB
Authentic Happiness Index	7	AHI
Questionnaire for Eudaimonic Well-Being	71	QEWB
Questions on Life Satisfaction	72	QOLS
Satisfaction With Life Scale	76	SWLS
Scale of Positive And Negative Experience	77	SPANE
Self-Evaluated Quality Of Life Questionnaire	78	SEQOL
State Anxiety Inventory	86	SAI
Subjective Happiness Scale	89	SHS
BBC Subjective Well-Being Scale	9	BBC-SWB
The Spiritual Well-Being Questionnaire	92	SP-WB-Q
Warwick-Edinburgh Mental Well-Being Scale-Short	95	WEMWBS
WHO-5	97	WHO5
WHO-Brief Spiritual, Religious and Personal Beliefs	98	WHO-QBF
Zung Self Rating Depression Scale	99	ZSDS

Table 2: Authors' SWB and MH index compilation. This list is not final and subject to expansion.

Instrument Name	ID	Instrument Acronym
PHQ-9	100	PHQ-9
Experience Sampling Method	101	ESM
World Value Survey Happiness Question	102	WVS-H
...	NA	...
...
...

Additional files available upon request:

1. Search log: Which contains A. Search terms / times / databases, B. Data extraction form.
2. PRISMA checklist