



Ben-Shlomo, Y., Cooper, R., & Kuh, D. (2016). The last two decades of life course epidemiology and its relevance for research on ageing. *International Journal of Epidemiology*, 45(4), 973-988.  
<https://doi.org/10.1093/ije/dyw096>

Peer reviewed version

Link to published version (if available):  
[10.1093/ije/dyw096](https://doi.org/10.1093/ije/dyw096)

[Link to publication record in Explore Bristol Research](#)  
PDF-document

This is the author accepted manuscript (AAM). The final published version (version of record) is available online via Oxford University Press at <http://ije.oxfordjournals.org/content/45/4/973.extract>. Please refer to any applicable terms of use of the publisher.

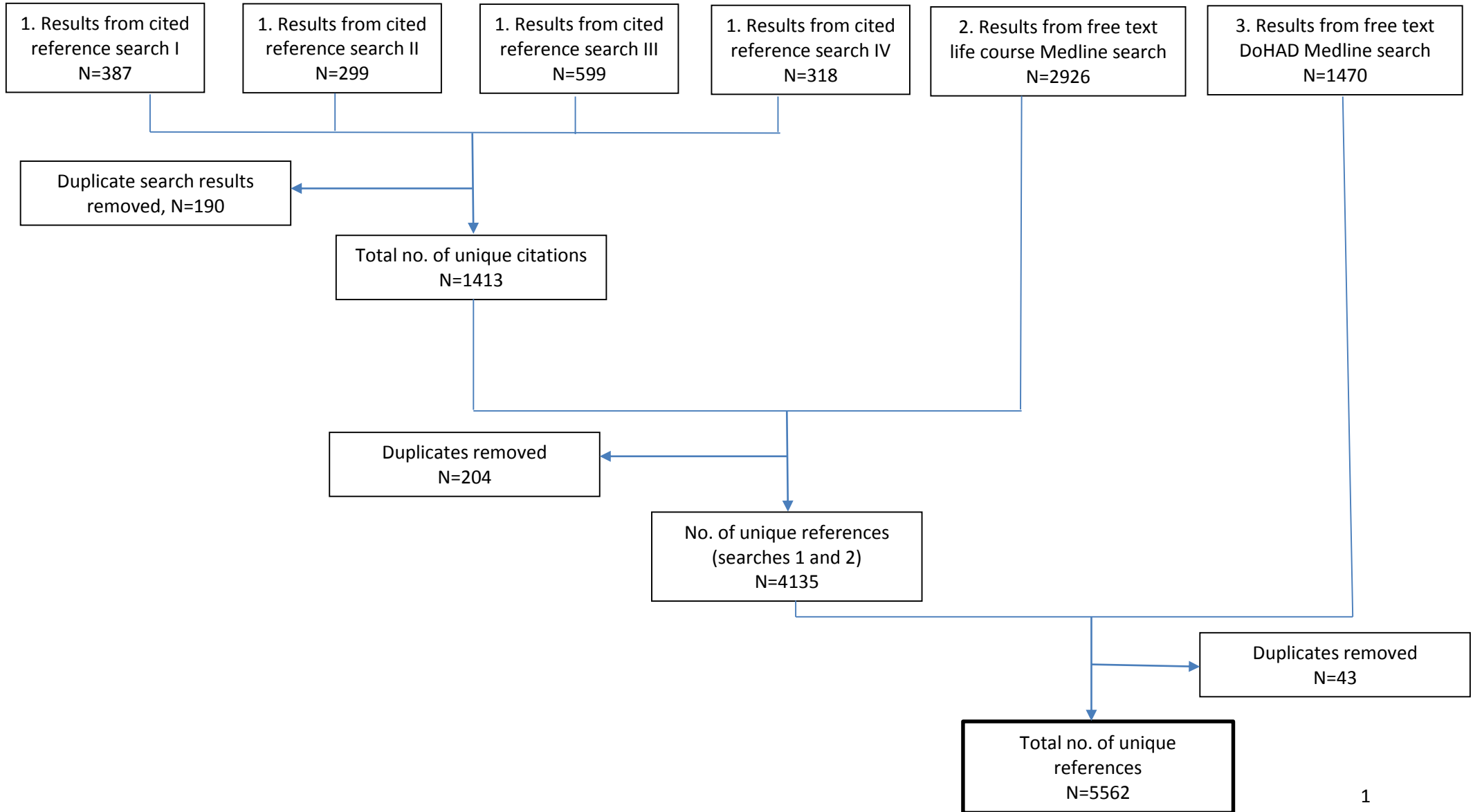
## University of Bristol - Explore Bristol Research

### General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available:  
<http://www.bristol.ac.uk/red/research-policy/pure/user-guides/ebr-terms/>

**Appendices**

**Supplementary Figure 1: Flow diagram of literature search results**



**Supplementary table 1: Summary of findings from classification of abstracts identified by literature search 2 (i.e. Medline search for papers using the term ‘life course’ in their title and/or abstract (1990-2014), see text box for details of this search)**

	%
<b>Type of paper (N=2196<sup>a</sup>)</b>	
Empirical	59.7
Methods – statistical or study design	5.9
Conceptual, narrative or qualitative reviews	27.4
Systematic review	1.6
Policy	3.5
Other	1.5
Unclassifiable	0.5
<b>Outcomes<sup>b</sup> (N=1694<sup>c</sup>)</b>	
1. Infectious and parasitic diseases	0.5
2. Cancer	3.3
3. Blood and blood-forming organs	0.8
4. Endocrine, nutritional and metabolic	9.7
5. Mental and behavioural	21.9
6. Nervous system	1.5
7. Eye, ear & related structures	0.5
8. Cardiovascular system	9.7
9. Respiratory system	1.2
10. Digestive system	2.5
11. Skin and related structures	0.1
12. Musculoskeletal system	4.6
13. Genitourinary system	0.8
14. Pregnancy, childbirth & the reproductive system	5.1
15. Conditions originating in the perinatal period	0.4
16. Injury, poisoning and other consequences of external causes	1.7
17. Self-reported general health measures	7.5
18. Social outcomes	8.7
19. Multiple biomedical outcomes	4.0
20. Multiple biomedical and social outcomes	1.2
21. Mortality	5.4
22. Behavioural risk factors	9.9
23. Other	11.6
<b>Exposures (N=1477<sup>c</sup>)</b>	
Socioeconomic environment	41.5
Psychosocial environment (extrinsic)	22.1
Physical environment	2.7
Cognitive	3.9
Body size and shape and maturation	12.6
Emotional (intrinsic factors)	7.4
Behavioural risk factors (incl. diet, activity, smoking)	11.3
Genetics	3.6
Epigenetics	1.8
Other	28.4
<b>Timing of exposures (N=1239)</b>	
Pre-adult (<20 y)	16.0
Adult (≥ 20 y)	29.5
Both pre-adult and adult	50.2

	Intergenerational	4.3
<b>Type of analyses</b> (N=1135)	Associational study covering 1 life stage <sup>d</sup>	23.9
	Associational study covering ≥ 2 life stages <sup>d</sup>	60.2
	Repeated measures/trajectories modelled	16.0
<b>Setting<sup>e</sup></b> (N=1230)	UK	20.7
	North America (incl USA and Canada)	44.6
	Mainland Europe	18.0
	Other high income country	7.4
	Low to middle income country	9.3

<sup>a</sup> All 2926 abstracts identified in the original search were screened by YBS, DK or RC and those that were eligible underwent further classification using pre-defined criteria.

Papers were eligible for classification if the authors had self-defined their work as taking a life course approach (even if this would not meet the review authors' criteria).

Papers were classified as not eligible (N=730) if the term life course had been used in the title or abstract in a different context and there was no evidence that the paper had any relevance to the life course approach as defined by Kuh and Ben-Shlomo.

Ns vary as it was not possible to provide a classification under each heading for all eligible papers.

<sup>b</sup> The list of outcomes was defined based on WHO International Classification of Diseases (ICD-10) and International Classification of Functioning, Disability and Health (ICF) classifications, as follows:

1. Infectious and parasitic diseases
2. Cancer
3. Diseases of the blood and blood-forming organs and certain disorder involving the immune mechanism/functions of the haematological and immunological systems/structures of the immunological system
4. Endocrine, nutritional and metabolic diseases (incl. diabetes)/functions and structures of the digestive, metabolic and endocrine systems
5. Mental and behavioural disorders/mental functions
6. Diseases of the nervous system/structures of the nervous system
7. Diseases of the eye and adnexa/ Diseases of the ear/sensory function/pain/Eye, ear & related structures
8. Diseases of the circulatory system/functions & structures of the CV systems
9. Diseases of the respiratory system/functions & structures of the respiratory system
10. Diseases of the digestive system (includes dental health)
11. Diseases of the skin /functions and structure of the skin and related structures
12. Diseases of the musculoskeletal system/Neuromusculoskeletal and movement-related functions /structures related with movement
13. Diseases of the genitourinary system/Functions & structures of Genitourinary system
14. Pregnancy, childbirth/functions & structure of the reproductive system
15. Conditions originating in the perinatal period/Congenital malformations, deformations and chromosomal abnormalities
16. Injury, poisoning and other consequences of external causes/External causes of morbidity and mortality (accidents, self-harm, assault etc.)
17. Self-reported general health measures
18. Social outcomes (e.g. income, occupational mobility)
19. Multiple biomedical outcomes
20. Multiple biomedical and social outcomes
21. Mortality
22. Behavioural risk factors (e.g. physical activity, alcohol and cigarette use)
23. Other

<sup>c</sup> Denominator (total number of classifiable papers) used to calculate %. Total % > 100% as some papers reported on >1 outcome and/or >1 exposure

<sup>d</sup> Life stages defined as follows: prenatal; infancy (0-2); childhood (2-12); adolescence (13-19); adult (20-64); older adult (65+)

<sup>e</sup> Setting defined according to World Bank classifications <http://data.worldbank.org/about/country-and-lending-groups>

**Supplementary table 2: Summary of findings from classification of abstracts identified by literature search 2 stratified by year of publication (i.e. Medline search for papers using the term 'life course' in their title and/or abstract (1990-2014), see text box for details of this search)**

	%			
	1990-1996	1997-2002	2003-2008	2009-2014
<b>Maximum N</b>	89	211	664	1232
<b>Type of paper (N=2196<sup>a</sup>)</b>				
Empirical	50.6	57.8	61.1	59.8
Methods – statistical or study design	5.6	5.2	7.4	5.3
Conceptual, narrative or qualitative reviews	37.1	29.9	24.9	27.7
Systematic review	0	0.5	2.3	1.5
Policy	1.1	2.4	2.4	4.4
Other	5.6	4.3	1.5	0.7
Unclassifiable	0	0	0.5	0.7
<b>Outcomes<sup>b</sup> (N=1694<sup>c</sup>)</b>				
1. Infectious and parasitic diseases	0	0	0.2	0.7
2. Cancer	1.6	1.4	4.3	3.2
3. Blood and blood-forming organs	0	0	0.4	1.2
4. Endocrine, nutritional and metabolic	0	4.3	8.7	11.5
5. Mental and behavioural	33.3	30.9	20.6	20.5
6. Nervous system	0	0	1.4	1.9
7. Eye, ear & related structures	0	0	0.4	0.6
8. Cardiovascular system	1.6	10.8	11.9	8.9
9. Respiratory system	0	1.4	1.4	1.2
10. Digestive system	0	2.2	2.8	2.5
11. Skin and related structures	0	0	0	0.1
12. Musculoskeletal system	4.8	2.9	3.4	1.7
13. Genitourinary system	0	0	0.8	1.0
14. Pregnancy, childbirth & the reproductive system	3.2	5.0	4.3	5.6
15. Conditions originating in the perinatal period	0	0	0.2	0.5
16. Injury, poisoning and other consequences of external causes	3.2	2.2	1.4	1.6
17. Self-reported general health measures	14.3	12.2	9.3	5.5
18. Social outcomes	25.4	17.3	6.1	7.8
19. Multiple biomedical outcomes	3.2	1.4	2.6	5.1
20. Multiple biomedical and social outcomes	1.6	0.7	0.6	1.5
21. Mortality	7.9	8.6	6.7	4.1
22. Behavioural risk factors	12.7	11.5	11.7	8.5
23. Other	4.8	5.0	12.8	12.3
<b>Exposures (N=1477<sup>c</sup>)</b>				
Socioeconomic environment	26.1	41.2	45.6	40.3
Psychosocial environment (extrinsic)	32.6	26.0	23.5	20.2
Physical environment	2.2	2.3	2.5	2.9
Cognitive	0	4.6	6.2	2.9
Body size and shape and maturation	4.3	6.9	13.7	13.4
Emotional (intrinsic factors)	4.3	6.9	6.6	8.1
Behavioural risk factors	4.3	16.8	11.8	10.6
Genetics	2.2	0	3.2	4.4

	Epigenetics	2.2	0	1.1	2.4
	Other	50.0	31.3	25.1	28.6
<b>Timing of exposures (N=1239)</b>					
	Pre-adult (<20 y)	13.9	17.7	13.7	17.2
	Adult (≥ 20 y)	55.6	32.7	31.5	26.5
	Both pre-adult and adult	30.6	48.7	51.6	50.7
	Intergenerational	0	0.9	3.2	5.7
<b>Type of analyses (N=1135)</b>					
	Associational study covering 1 life stage <sup>d</sup>	58.3	33.3	25.1	20.6
	Associational study covering ≥ 2 life stages <sup>d</sup>	37.5	54.8	62.4	60.6
	Repeated measures/trajectories modelled	4.2	11.8	12.5	18.8
<b>Setting<sup>e</sup> (N=1230)</b>					
	UK	9.1	23.2	25.7	18.3
	North America (incl USA and Canada)	69.7	44.6	43.1	44.3
	Mainland Europe	18.2	17.0	16.8	18.7
	Other high income country	3.0	11.6	7.2	7.0
	Low to middle income country	0	3.6	7.2	11.7

a, b, c, d, e See footnotes for supplementary table 1