

Additional File 2: Study characteristics

Haarmann A et al: Institutional Conflicts of Interest in Health-related Research — A Scoping Review.

Characteristics	References	Full dataset (N=48) Frequency (%)
Year of publication		
Before 2000	(39)	1 (2.08)
2000-2004	(24, 26, 27, 32, 35, 36, 41, 50, 57, 60, 62, 65)	12 (25.00)
2005-2009	(5, 9, 34, 37, 40, 42, 45, 47, 56)	9 (18.75)
2010-2014	(30, 43, 44, 46, 49, 51, 59, 63, 64)	9 (18.75)
2015-2019	(12, 25, 29, 38, 48, 53-55, 58)	9 (18.75)
2020-2022	(7, 10, 11, 28, 31, 33, 52, 61)	8 (16.67)
Country, region*		
USA	(5, 9, 11, 12, 24-27, 29, 30, 32-38, 42, 43, 46, 47, 49-51, 53-60, 62, 64, 65)	35 (72.92)
Canada	(26, 30, 40, 41, 44, 60, 61)	7 (14.58)
Global	(28, 31, 41, 45)	4 (8.33)
Australia	(40, 48)	2 (4.17)
Japan	(10, 63)	2 (4.17)
Brazil	(45)	1 (2.08)
China	(7)	1 (2.08)
Germany	(39)	1 (2.08)
Singapore	(52)	1 (2.08)
Type of Study		
Empirical	(7, 9-11, 25, 26, 28-31, 33, 35-38, 40-42, 44, 46-50, 53, 54, 59-62, 65)	32 (66.7)
Conceptual		16 (33.3)
Type of institution referenced regarding institutional COI*		
Hospital or clinics	(7, 9, 10, 12, 24-31, 33, 35, 38-40, 45, 48, 51-53, 55-57, 60, 61, 65)	28 (58.33)
Universities or academic	(7, 10, 24-36, 39, 41-44, 47, 48, 58-60, 63, 65)	28 (58.33)
Medical schools	(10, 12, 25, 27, 28, 34, 35, 37, 42, 43, 45, 49, 50, 54, 56, 62, 65)	18 (37.50)
Research Institutes	(5, 11, 24, 25, 27, 30, 31, 34, 35, 39-41, 45, 46, 63)	16 (33.33)
Other	(11, 27, 28, 33, 39, 42, 46, 57, 63)	9 (18.75)
Unspecified	(64)	1 (2.06)
Recipient(s) of direct financial benefits*		
Researchers & officials	(5, 9, 11, 24-28, 30, 33-36, 38-42, 44-47, 50-52, 55, 62, 64)	31 (73.81)
Universities /academic	(5, 7, 10, 24-27, 29, 30, 33, 35, 39, 41, 43, 44, 47, 48, 52, 55, 58-60, 63-65)	25 (59.52)
Hospitals and clinics	(7, 9-12, 24-26, 28, 29, 31, 33, 35, 38, 40, 45, 48, 51, 53, 55-57, 60, 61, 65)	25 (59.52)
Health professionals	(7, 9, 28-30, 36, 38-41, 43, 45-47, 49-51, 57-59)	21 (43.75)
Research institutes (not specified)	(5, 11, 24, 25, 27, 31, 33-35, 37, 38, 41, 45, 46, 62-64)	17 (35.42)
Medical schools	(10, 12, 25, 28, 30, 35, 42, 43, 45, 49, 50, 54, 56, 58, 59, 62, 63, 65)	17 (35.42)
Other institutions/organisations	(24, 27, 45, 46, 48, 53, 54)	7 (14.58)

Characteristics	References	Full dataset (N=48) Frequency (%)
Industry involved*		
Health-related industries (pharmaceutical, biotech, medical -device)	(5, 7, 9, 10, 12, 24-27, 29-31, 34-36, 39-41, 43-51, 53-55, 57-64)	38 (79.17)
Other sectors (food, tobacco, tech, financial services, education)	(12, 24, 27, 28, 31, 33, 43, 44, 52, 56, 65)	11 (22.92)
Unspecified, which industry is involved	(11, 32, 37, 42, 48)	5 (10.42)
Research funders (funders, donors, grant, philanthropy)	(31, 42, 52)	3 (6.25)
Healthcare sector	(25, 29)	2 (4.17)
No industry mentioned	(38)	1 (2.08)
Institutional COI text focus		
Institutional COI exclusively	(5, 10-12, 34-37, 39, 40, 43, 44, 46, 52-56, 60-62, 65)	22 (45.83)
Institutional COI is the main focus & individual COI subordinate role	(24, 26-28, 30, 32, 38, 41, 42, 51)	10 (20.83)
Mentions both institutional and individual COI to about the same extent	(7, 9, 25, 33, 47, 49, 50, 58, 64)	9 (18.75)
Individual COI is the main focus & institutional COI subordinate role	(29, 31, 45, 48, 63)	5 (10.42)
Individual COI is the main focus	(59)	1 (2.08)
Primary focus on business, legal and regulatory aspects of physician joint ventures is the main focus & institutional COI subordinate role	(56)	1 (2.08)
Direct financial institutional COI*	(5, 7, 9-12, 24, 26-65)	47 (97.95)
Receiving gifts, endowments, or grants	(5, 7, 9-12, 24, 26-35, 37-48, 50-65)	45 (93.75)
Holding intellectual property rights of programmes, services, patents, equity positions, or options	(7, 9, 12, 26, 27, 31, 32, 34, 35, 39, 41, 42, 47, 50, 51, 54-56, 58, 59, 64, 65)	24 (50.0)
Unspecified direct benefits	(24, 40, 49)	3 (6.25)
Research commercialisation	(5, 12)	2 (4.17)
Indirect financial institutional COI*	(7, 10, 12, 24, 27, 28, 31, 33, 34, 41, 43-45, 49, 55, 58)	16 (33.33)
Benefit through increasing services	(7, 10, 12, 31, 33, 34, 41, 43-45, 49, 55, 58)	13 (27.08)
Unspecified indirect benefits	(24, 26, 28)	3 (6.12)
Direct financial individual COI*	(7, 9, 12, 24-32, 34-37, 39-41, 46-48, 50-52, 54-60, 63-65)	35 (72.91)
Personal fees	(12, 25, 27-31, 35, 37, 39, 41, 46-48, 50-52, 54, 55, 57-59, 63-65)	27 (56.25)
Stock and other securities	(7, 9, 12, 24, 25, 27, 29, 31, 32, 34, 36, 37, 39, 47, 51, 57, 59, 65)	18 (37.50)
Patents	(9, 12, 29, 31, 32, 34, 35, 41, 47, 50, 51, 55, 59, 64)	14 (29.17)
Grant	(7, 12, 27, 28, 31, 40, 46, 51, 55, 60)	10 (20.83)
Employment income	(9, 27, 48, 50, 54)	5 (10.42)

Characteristics	References	Full dataset (N=48) Frequency (%)
Unspecified direct financial benefits	(26, 56)	2 (4.17)
Indirect financial individual COI*	(7, 57, 58)	3 (6.25)
Benefit through professional status	(7, 58)	2 (4.17)
Benefit through increasing services (business structuring)	(57)	1 (2.08)
Non-financial institutional or individual COI*	(7, 11, 12, 27, 28, 31, 34, 35, 41, 43, 45, 48, 51-56, 58-61, 63, 64)	25 (52.08)
Prestige and reputation	(7, 12, 27, 28, 32, 41, 43, 48, 51, 52, 54, 55, 60, 61)	15 (31.25)
Career advancements and professional roles	(11, 31, 34, 35, 45, 53, 54, 56, 59, 63)	11 (22.92)
Possible consequences of institutional COIs*	(5, 7, 9-12, 24-65)	48 (100%)
Bias & distortion in research process	(5, 7, 9-12, 27-33, 35-65)	45 (93.8)
Harm to scientific integrity	(5, 7, 10-12, 24-27, 31-33, 35, 37, 38, 40-45, 47-49, 51, 52, 54-56, 58-65)	37 (77.08)
Patient safety, public trust & disadvantages for patients	(9, 26, 28, 38, 46, 53, 54, 57)	8 (16.67)
Structural, institutional, or legal weaknesses	(34, 39, 40, 42, 64)	5 (10.42)
Career-related & reputation-driven conflicts	(39, 64)	2 (4.17)
Institutional COI management recommendations*	(5, 7, 9, 10, 12, 24-34, 36, 38-65)	45 (93.8)
Institutional policies & oversight mechanisms	(5, 7, 9, 10, 12, 24-31, 34, 36, 38, 39, 41-45, 49, 51-60, 62, 63, 65)	37 (77.08)
Financial transparency & restrictions of financial flows	(5, 7, 9, 10, 24, 25, 27, 28, 30-34, 36, 39, 42, 43, 45-48, 50, 51, 56-59, 62, 65)	29 (60.42)
Legal, ethical & policy development	(7, 10, 12, 29-31, 33, 40, 43, 44, 50, 51, 61-63)	15 (31.25)
Cultural and structural change in institutions	(7, 24, 28, 36, 43-45, 49, 57, 60, 63, 64)	12 (25.0)
Data, transparency & public engagement	(33, 34, 43, 56, 62)	5 (10.42)

Note: Multiple entries possible; base for the calculation of percentages is the number of reports

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