Type 2 diabetes stigma and its association with clinical, psychological and behavioral outcomes: systematic review and meta-analysis

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INTRODUCTION

The International Diabetes Federation recognizes type 2 diabetes (T2D) stigma as an important psychosocial outcome of diabetes.

Persons with T2D may be blamed, judged and perceived as lazy for having diabetes and undisciplined for having uncontrolled blood glucose.

The negative health impact of T2D stigma was theoretically proposed in the framework for diabetes stigma by Schabert and Colleagues in 2013. Yet there is a lack of systematic synthesis of research evidence on the impact of T2D stigma.

OBJECTIVES

The purpose of this review was to synthesize quantitative research evidence on the impact of T2D stigma on psychological, behavioral, and clinical outcomes.
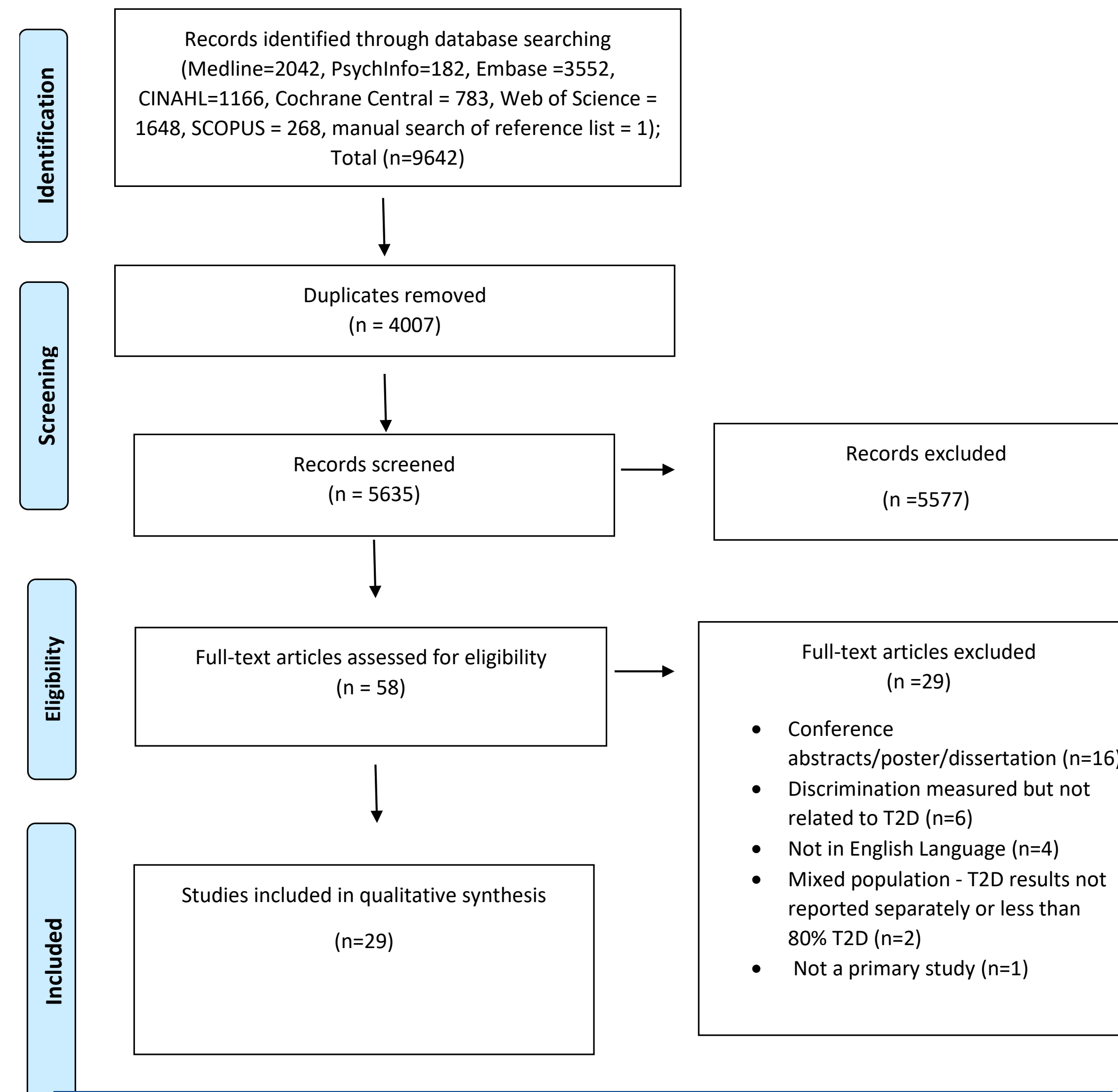
METHODS

We used Joanna Briggs Institute (JBI) systematic review of associations. We searched APA PyschInfo, Cochrane Central, Scopus, Web of Science, Medline, CINAHL and EMBASE from their inception to November 7, 2022, for articles reporting some quantitative measures of T2D stigma and its association with at least one of the following outcomes: clinical (HbA1c), psychological (depressive symptoms, anxious symptoms, and diabetes distress) and behavioral (self-management behaviors).
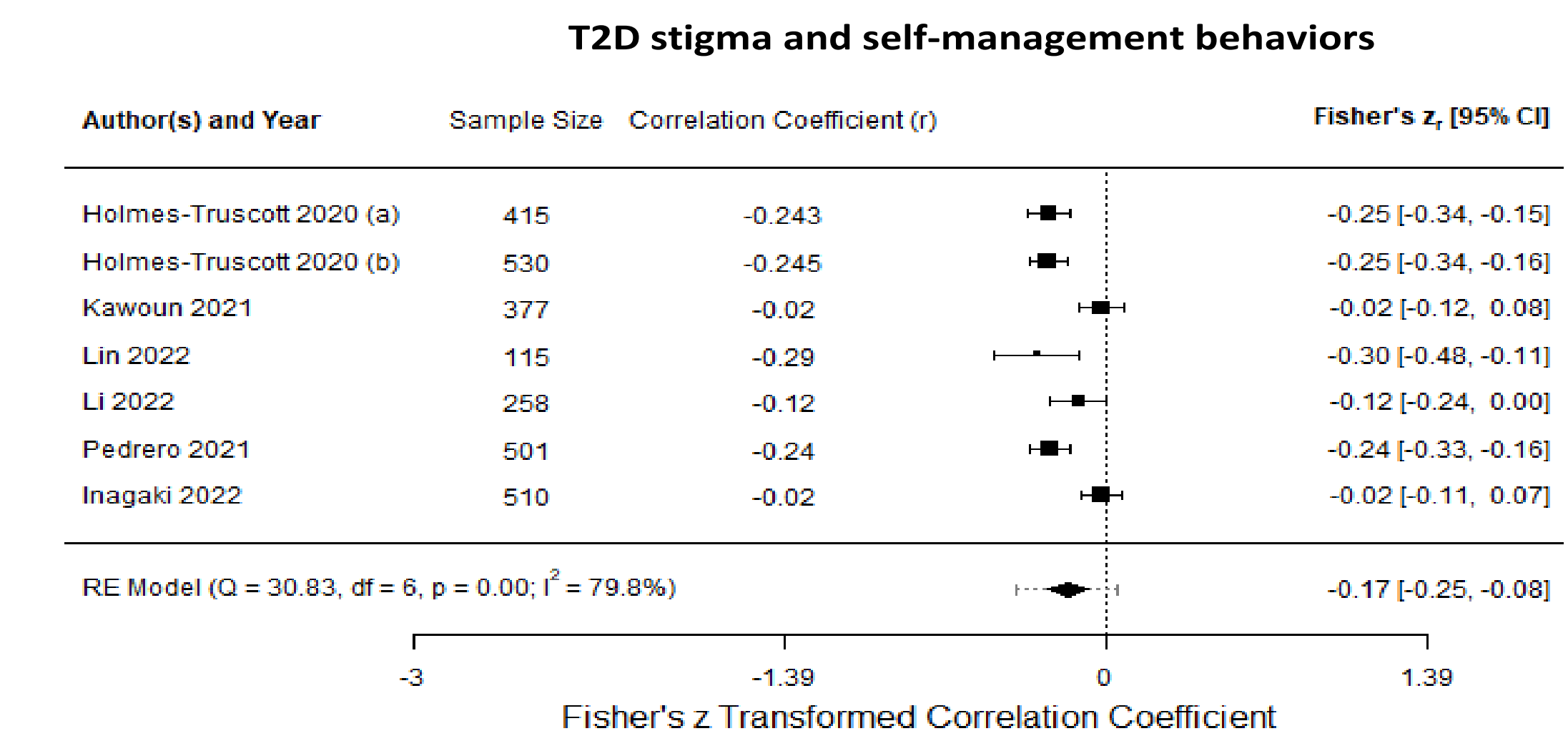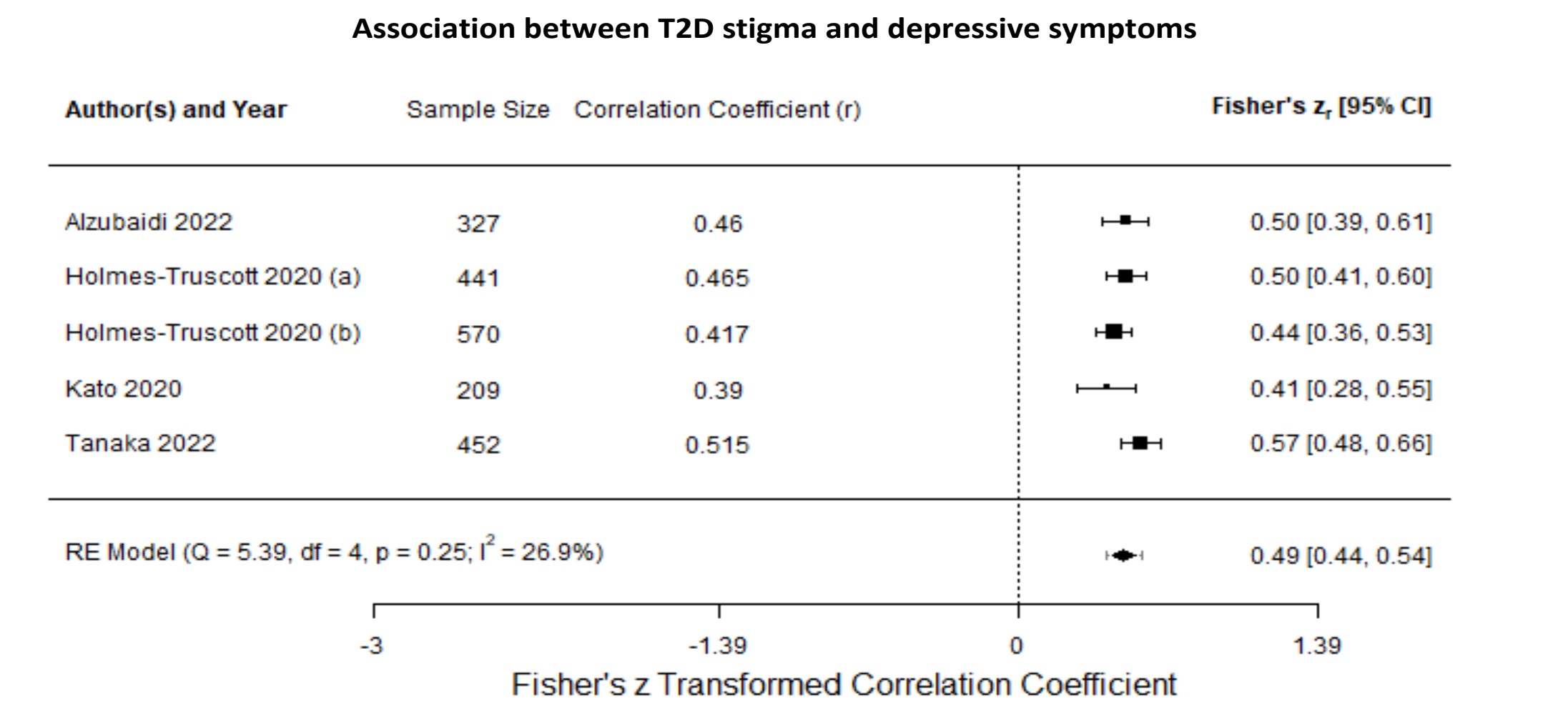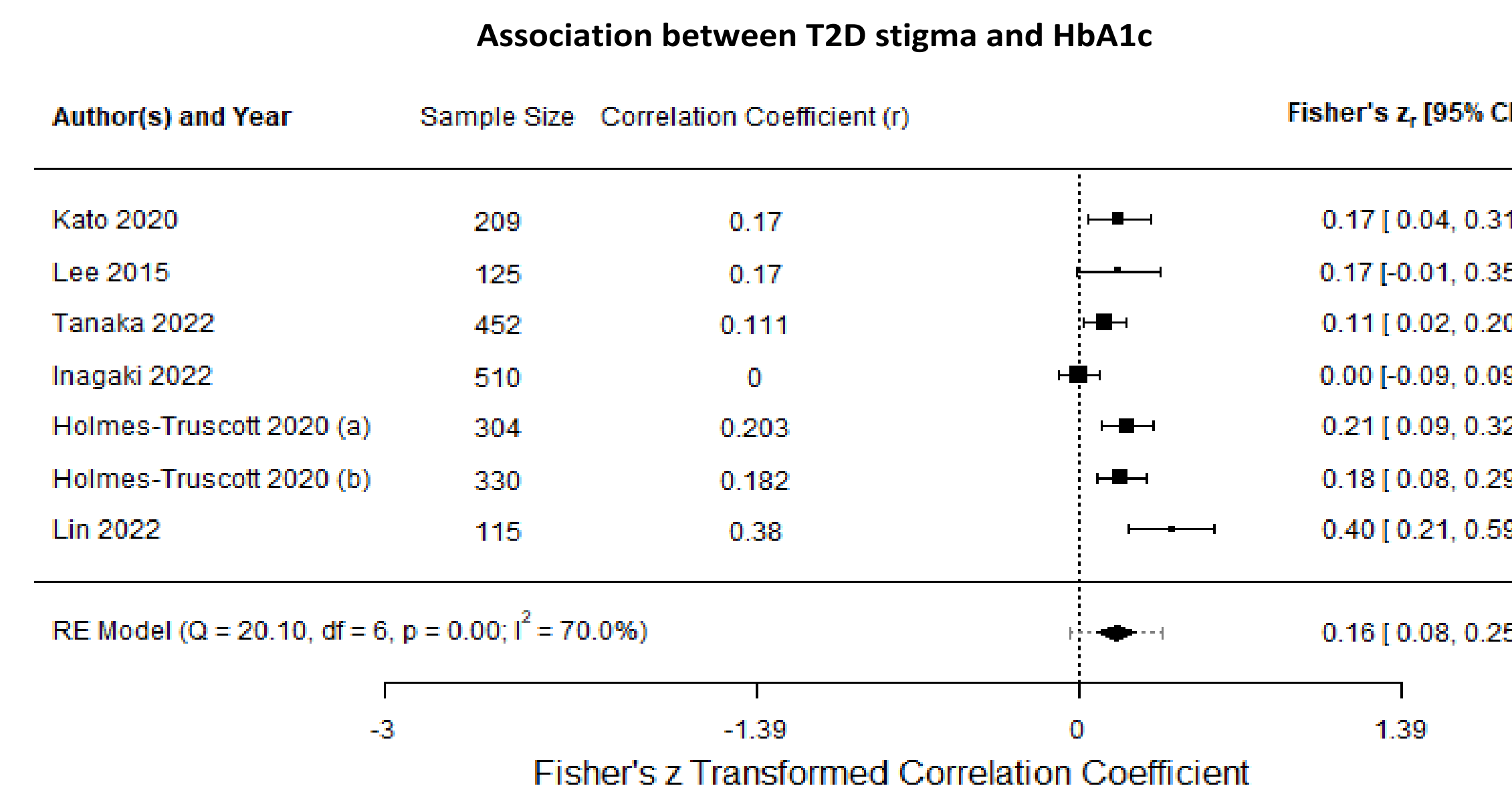
We used controlled vocabulary and keywords to search terms related to the condition "diabetes" and terms related to "stigma" to represent the exposure of interest

Risk of bias was assessed with the JBI critical appraisal checklist.

Correlation coefficients were pooled in mixed effect meta-analyses.

RESULTS

Records identified through database searching (Medline=2042, PsychInfo=182, Embase =3552, CINAHL=1166, Cochrane Central = 783, Web of Science = 1648, SCOPUS = 268, manual search of reference list = 1); Total (n=9642)

Duplicates removed (n = 4007)

Records screened (n = 5635)

Records excluded (n =5577)

Full-text articles assessed for eligibility (n = 58)

Full-text articles excluded (n =29)
- Conference abstracts/poster/dissertation (n=16)
- Discrimination measured but not related to T2D (n=6)
- Not in English Language (n=4)
- Mixed population - T2D results not reported separately or less than 80% T2D (n=2)
- Not a primary study (n=1)

Studies included in qualitative synthesis (n=29)

Association between T2D stigma and HbA1c

Author(s) and Year	Sample Size	Correlation Coefficient (r)	Fisher's z_r [95% CI]
Kato 2020	209	0.17	0.17 [0.04, 0.31]
Lee 2015	125	0.17	0.17 [-0.01, 0.35]
Tanaka 2022	452	0.111	0.11 [0.02, 0.20]
Inagaki 2022	510	0	0.00 [-0.09, 0.09]
Holmes-Truscott 2020 (a)	304	0.203	0.21 [0.09, 0.32]
Holmes-Truscott 2020 (b)	330	0.182	0.18 [0.08, 0.29]
Lin 2022	115	0.38	0.40 [0.21, 0.59]
RE Model (Q = 20.10, df = 6, p = 0.00; I^2 = 70.0%)			0.16 [0.08, 0.25]

Fisher's z Transformed Correlation Coefficient

CONCLUSION

T2D stigma is associated with negative health outcomes in persons living with the condition. Clinicians need to recognize the experience of T2D stigma as a barrier to maintaining optimal glycemic management and incorporate evidence-based stigma coping strategies in their routine diabetes self-management classes.

REFERENCES

International Diabetes Federation. Diabetes Facts & figures 2021. https://idf.org/aboutdiabetes/what-is-diabetes/facts-figures.html (accessed November 18, 2022).
Goffman E. Stigma: Notes on the management of spoiled identity. Simon and Schuster; 1963.

Association between T2D stigma and depressive symptoms

Author(s) and Year	Sample Size	Correlation Coefficient (r)	Fisher's z_r [95% CI]
Alzubaidi 2022	327	0.46	0.50 [0.39, 0.61]
Holmes-Truscott 2020 (a)	441	0.465	0.50 [0.41, 0.60]
Holmes-Truscott 2020 (b)	570	0.417	0.44 [0.36, 0.53]
Kato 2020	209	0.39	0.41 [0.28, 0.55]
Tanaka 2022	452	0.515	0.57 [0.48, 0.66]
RE Model (Q = 5.39, df = 4, p = 0.25; I^2 = 26.9%)			0.49 [0.44, 0.54]

Fisher's z Transformed Correlation Coefficient

T2D stigma and self-management behaviors

Author(s) and Year	Sample Size	Correlation Coefficient (r)	Fisher's z_r [95% CI]
Holmes-Truscott 2020 (a)	415	-0.243	-0.25 [-0.34, -0.15]
Holmes-Truscott 2020 (b)	530	-0.245	-0.25 [-0.34, -0.16]
Kawoun 2021	377	-0.02	-0.02 [-0.12, 0.08]
Lin 2022	115	-0.29	-0.30 [-0.48, -0.11]
Li 2022	258	-0.12	-0.12 [-0.24, 0.00]
Pedrero 2021	501	-0.24	-0.24 [-0.33, -0.16]
Inagaki 2022	510	-0.02	-0.02 [-0.11, 0.07]
RE Model (Q = 30.83, df = 6, p = 0.00; I^2 = 79.8%)			-0.17 [-0.25, -0.08]

Fisher's z Transformed Correlation Coefficient