

# Supplemental files

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Supplemental Table 1. Citations for included reviews

Study ID	Citation
Abdi 2020	Abdi, A.; Jalilian, M.; Sarbarzeh, P. A.; Vlasisavljevic, Z. Diabetes and COVID-19: A systematic review on the current evidences. <i>Diabetes Research &amp; Clinical Practice</i> 2020;166():108347
Aggarwal 2020	Aggarwal, G.; Lippi, G.; Lavie, C. J.; Henry, B. M.; Sanchis-Gomar, F. Diabetes mellitus association with coronavirus disease 2019 (COVID-19) severity and mortality: A pooled analysis. <i>Journal of Diabetes</i> 2020;12(11):851-855
Apicella 2020	Apicella, Matteo; Campopiano, Maria Cristina; Mantuano, Michele; Mazoni, Laura; Coppelli, Alberto; Del Prato, Stefano. COVID-19 in people with diabetes: understanding the reasons for worse outcomes. <i>The Lancet Diabetes &amp; endocrinology</i> 2020;8:782–92 <a href="#">PubMed</a>
Awortwe 2020	Awortwe, C.; Cascorbi, I. Meta-analysis on outcome-worsening comorbidities of COVID-19 and related potential drug-drug interactions. <i>Pharmacological Research</i> 2020. <a href="https://doi.org/10.1016/j.phrs.2020.105250">https://doi.org/10.1016/j.phrs.2020.105250</a>
Bajgain 2020	Bajgain, K. T.; Badal, S.; Bajgain, B. B.; Santana, M. J. Prevalence of comorbidities among individuals with COVID-19: A rapid review of current literature. <i>American Journal of Infection Control</i> 2020. <a href="https://doi.org/10.1016/j.ajic.2020.06.213">https://doi.org/10.1016/j.ajic.2020.06.213</a>
Baradaran 2020	Baradaran, A.; Ebrahimzadeh, M. H.; Baradaran, A.; Kachooei, A. R. Prevalence of Comorbidities in COVID-19 Patients: A Systematic Review and Meta-Analysis. <i>Archives of Bone &amp; Joint Surgery</i> 2020;8(Suppl 1):247-255
Barrera 2020	Barrera FJ, Shekhar S, Wurth R, Moreno-Pena PJ, Ponce OJ, Hajdenberg M, Alvarez-Villalobos NA, Hall JE, Schiffrin EL, Eisenhofer G, Porter F, Brito JP, Bornstein SR, Stratakis CA, González-González JG, Rodríguez-Gutiérrez R, Hannah-Shmouni F. Prevalence of Diabetes and Hypertension and Their Associated Risks for Poor Outcomes in Covid-19 Patients. <i>J Endocr Soc.</i> 2020 Jul 21;4(9):bvaa102. doi: 10.1210/jendso/bvaa102. Erratum in: <i>J Endocr Soc.</i> 2020 Nov 07;5(1):bvaa175. PMID: 32885126; PMCID: PMC7454711. Format:
Bennett 2020	Bennett, S.; Tafuro, J.; Mayer, J.; Darlington, D.; Wong, C. W.; Muntean, E. A.; Wong, N.; Mallen, C.; Kwok, C. S. Clinical features and outcomes of adults with coronavirus disease 2019: A systematic review and pooled analysis of the literature. <i>International Journal of Clinical Practice</i> 2020;():e13725
Boddu 2020	Boddu, S. K.; Aurangabadkar, G.; Kuchay, M. S. New onset diabetes, type 1 diabetes and COVID-19. <i>Diabetes and Metabolic Syndrome: Clinical Research and Reviews</i> 01 Nov 2020;14(6):2211-2217
Chen 2020	Chen, J.; Wu, C.; Wang, X.; Yu, J.; Sun, Z. The Impact of COVID-19 on Blood Glucose: A Systematic Review and Meta-Analysis. <i>Frontiers in Endocrinology</i> 2020;11():574541
Chidambaram 2020	Chidambaram, V.; Tun, N. L.; Haque, W. Z.; Majella, M. G.; Sivakumar, R. K.; Kumar, A.; Hsu, A. T.; Ishak, I. A.; Nur, A. A.; Ayeh, S. K.; Salia, E. L.; Zil, E. Ali A.; Saeed, M. A.; Sarena, A. P. B.; Seth, B.; Ahmadzada, M.; Haque, E. F.; Neupane, P.; Wang, K. H.; Pu, T. M.; Ali, S. M. H.; Arshad, M. A.; Wang, L.; Baksh, S.; Karakousis, P. C.; Galiatsatos, P. Factors associated with disease severity and mortality among patients with COVID-19: A systematic review and meta-analysis. <i>PLoS ONE [Electronic Resource]</i> 2020;15(11):e0241541
Chowdhury 2020	Chowdhury, S.; Goswami, S. COVID-19 and type 1 diabetes: dealing with the difficult duo. <i>International Journal of Diabetes in Developing Countries</i> 2020;40(3):315-320
Costa 2020	Costa, F. F.; Rosario, W. R.; Ribeiro Farias, A. C.; de Souza, R. G.; Duarte Gondim, R. S.; Barroso, W. A. Metabolic syndrome and COVID-19: An update on the associated comorbidities and proposed therapies. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(5):809-814
d'Annunzio 2020	d'Annunzio, G.; Maffei, C.; Cherubini, V.; Rabbone, I.; Scaramuzza, A.; Schiaffini, R.; Minuto, N.; Piccolo, G.; Maghnie, M. Caring for children and adolescents with type 1 diabetes mellitus: Italian Society for Pediatric Endocrinology and Diabetology (ISPED) statements during COVID-19 pandemic. <i>Diabetes Research &amp; Clinical Practice</i> 2020;168():108372
de Almeida-Pititto 2020	de Almeida-Pititto, B.; Dualib, P. M.; Zajdenverg, L.; Dantas, J. R.; de Souza, F. D.; Rodacki, M.; Bertoluci, M. C.; Brazilian Diabetes Society Study, Group. Severity and mortality of COVID 19 in patients with diabetes, hypertension and cardiovascular disease: a meta-analysis. <i>Diabetology &amp; metabolic syndrome</i> 2020;12:75

Study ID	Citation
Del Sole 2020	Del Sole, F.; Farcomeni, A.; Loffredo, L.; Carnevale, R.; Menichelli, D.; Vicario, T.; Pignatelli, P.; Pastori, D. Features of severe COVID-19: A systematic review and meta-analysis. <i>European Journal of Clinical Investigation</i> 2020;50(10):e13378
Deravi 2020	Deravi, N.; Fathi, M.; Vakili, K.; Yaghoobpoor, S.; Pirzadeh, M.; Mokhtari, M.; Fazel, T.; Ahsan, E.; Ghaffari, S. SARS-CoV-2 infection in patients with diabetes mellitus and hypertension: a systematic review. <i>Reviews in Cardiovascular Medicine</i> 2020;21(3):385-397
Desai 2020	Desai, R.; Singh, S.; Parekh, T.; Sachdeva, S.; Sachdeva, R.; Kumar, G. COVID-19 and diabetes mellitus: A need for prudence in elderly patients from a pooled analysis. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(4):683-685
Deshmukh 2020	Deshmukh, V.; Tripathi, S. C.; Pandey, A.; Deshmukh, V.; Vykoukal, J.; Patil, A.; Sontakke, B. COVID-19: a conundrum to decipher. <i>European Review for Medical &amp; Pharmacological Sciences</i> 2020;24(10):5830-5841
Du 2020	Du, M.; Lin, Y. X.; Yan, W. X.; Tao, L. Y.; Liu, M.; Liu, J. Prevalence and impact of diabetes in patients with COVID-19 in China. <i>World Journal of Diabetes</i> 15 Oct 2020;11(10):468-480
Emami 2020	Emami, A.; Javanmardi, F.; Pirbonyeh, N.; Akbari, A. Prevalence of Underlying Diseases in Hospitalized Patients with COVID-19: a Systematic Review and Meta-Analysis. <i>Archives of Academic Emergency Medicine</i> 2020;8(1):e35
Espinosa 2020	Espinosa, O. A.; Zanetti, A. D. S.; Antunes, E. F.; Longhi, F. G.; Matos, T. A.; Battaglini, P. F. Prevalence of comorbidities in patients and mortality cases affected by SARS-CoV2: a systematic review and meta-analysis. <i>Revista do Instituto de Medicina Tropical de Sao Paulo</i> 2020;62():e43
Fadini 2020	Fadini, GP; Morieri, ML; Longato, E; Avogaro, A. Prevalence and impact of diabetes among people infected with SARS-CoV-2. <i>Journal of Endocrinological Investigation</i> 2020 <a href="https://doi.org/10.1007/s40618-020-01236-2">https://doi.org/10.1007/s40618-020-01236-2</a>
Faghir-Gangi 2020	Faghir-Gangi, M.; Moameri, H.; Abdolmohamadi, N.; Nematollahi, S. The prevalence of type 2 diabetes in patients with COVID-19: a systematic review and meta-analysis. <i>Clinical Diabetology</i> November 2020;9(5):271-278
Fang 2020	Fang, Xiaoyu; Li, Shen; Yu, Hao; Wang, Penghao; Zhang, Yao; Chen, Zheng; Li, Yang; Cheng, Liqing; Li, Wenbin; Jia, Hong. Epidemiological, comorbidity factors with severity and prognosis of COVID-19: a systematic review and meta-analysis. <i>Aging (Albany NY)</i> 2020;12(13):12493
Figliozzi 2020	Figliozzi, S.; Masci, P. G.; Ahmadi, N.; Tondi, L.; Koutli, E.; Aimò, A.; Stamatelopoulos, K.; Dimopoulos, M. A.; Caforio, A. L. P.; Georgiopoulos, G. Predictors of adverse prognosis in COVID-19: A systematic review and meta-analysis. <i>European Journal of Clinical Investigation</i> 2020;50(10):e13362
Flaherty 2020	Flaherty, Gerard Thomas; Hession, Paul; Liew, Chee Hwui; Lim, Bryan Chang Wei; Leong, Tan Kok; Lim, Victor; Sulaiman, Lokman Hakim. COVID-19 in adult patients with pre-existing chronic cardiac, respiratory and metabolic disease: a critical literature review with clinical recommendations. <i>Tropical Diseases, Travel Medicine and Vaccines</i> (2020) 6:16. <a href="https://doi.org/10.1186/s40794-020-00118-y">https://doi.org/10.1186/s40794-020-00118-y</a>
Gallo Marin 2020	Gallo Marin, Benjamin; Aghagholi, Ghazal; Lavine, Katya; Yang, Lanbo; Siff, Emily J; Chiang, Silvia S; Salazar-Mather, Thais P; Dumenco, Luba; Savaria, Michael C; Aung, Su N. Predictors of COVID-19 severity: A literature review. <i>Reviews in Medical Virology</i> 2020:e2146. <a href="https://doi.org/10.1002/rmv.2146">https://doi.org/10.1002/rmv.2146</a>
Gold 2020	Gold, M. S.; Sehayek, D.; Gabrielli, S.; Zhang, X.; McCusker, C.; Ben-Shoshan, M. COVID-19 and comorbidities: a systematic review and meta-analysis. <i>Postgraduate Medicine</i> 2020;132(8):749-755
Guler 2020	Guler, A. A.; Ozturk, M. A. COVID-19 in chronic diseases. <i>Gazi Medical Journal</i> 19 May 2020;31(2):266-270
Guo 2020	Guo, L.; Shi, Z.; Zhang, Y.; Wang, C.; Do Vale Moreira, N. C.; Zuo, H.; Hussain, A. Comorbid diabetes and the risk of disease severity or death among 8807 COVID-19 patients in China: A meta-analysis. <i>Diabetes Research &amp; Clinical Practice</i> 2020;166():108346
Hariyanto 2020	Hariyanto, T. I.; Kurniawan, A. Metformin use is associated with reduced mortality rate from coronavirus disease 2019 (COVID-19) infection. <i>Obesity Medicine</i> September 2020. <a href="https://doi.org/10.1016/j.obmed.2020.100290">https://doi.org/10.1016/j.obmed.2020.100290</a>

Study ID	Citation
Hartmann-Boyce 2020	Hartmann-Boyce, Jamie; Morris, Elizabeth; Goyder, Clare; Kinton, Jade; Perring, James; Nunan, David; Mahtani, Kamal; Buse, John B; Del Prato, Stefano; Ji, Linong. Diabetes and COVID-19: Risks, Management, and Learnings From Other National Disasters. <i>Diabetes Care</i> 2020;43:1695–1703 <a href="#">PubMed</a> . <a href="https://doi.org/10.2337/dc20-1192">https://doi.org/10.2337/dc20-1192</a>
Hu 2020	Hu, Y.; Sun, J.; Dai, Z.; Deng, H.; Li, X.; Huang, Q.; Wu, Y.; Sun, L.; Xu, Y. Prevalence and severity of corona virus disease 2019 (COVID-19): A systematic review and meta-analysis. <i>Journal of Clinical Virology</i> 2020;127():104371
Huang 2020	Huang, I.; Lim, M. A.; Pranata, R. Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia - A systematic review, meta-analysis, and meta-regression. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(4):395-403
Hussain 2020	Hussain, A.; Bhowmik, B.; do Vale Moreira, N. C. COVID-19 and diabetes: Knowledge in progress. <i>Diabetes Research and Clinical Practice</i> April 2020;162. <a href="https://doi.org/10.1016/j.diabres.2020.108142">https://doi.org/10.1016/j.diabres.2020.108142</a>
Hussain 2020	Hussain, S.; Baxi, H.; Chand Jamali, M.; Nisar, N.; Hussain, M. S. Burden of diabetes mellitus and its impact on COVID-19 patients: A meta-analysis of real-world evidence. <i>Diabetes and Metabolic Syndrome: Clinical Research and Reviews</i> November - December 2020;14(6):1595-1602
Izcovich 2020	Izcovich, A.; Ragusa, M. A.; Tortosa, F.; Lavena Marzio, M. A.; Agnoletti, C.; Bengolea, A.; Ceirano, A.; Espinosa, F.; Saavedra, E.; Sanguine, V.; Tassara, A.; Cid, C.; Catalano, H. N.; Agarwal, A.; Foroutan, F.; Rada, G. Prognostic factors for severity and mortality in patients infected with COVID-19: A systematic review. <i>PLoS ONE [Electronic Resource]</i> 2020;15(11):e0241955
Javanmardi 2020	Javanmardi, F.; Keshavarzi, A.; Akbari, A.; Emami, A.; Pirbonyeh, N. Prevalence of underlying diseases in died cases of COVID-19: A systematic review and meta-analysis. <i>PLoS ONE [Electronic Resource]</i> 2020;15(10):e0241265
Kaur 2020	Kaur, N.; Gupta, I.; Singh, H.; Karia, R.; Ashraf, A.; Habib, A.; Patel, U. K.; Malik, P. Epidemiological and Clinical Characteristics of 6635 COVID-19 Patients: a Pooled Analysis. <i>SN Comprehensive Clinical Medicine</i> 2020. <a href="https://doi.org/10.1007/s42399-020-00393-y">https://doi.org/10.1007/s42399-020-00393-y</a>
Khan 2020	Khan, M. M. A.; Khan, M. N.; Mustagir, M. G.; Rana, J.; Islam, M. S.; Kabir, M. I. Effects of underlying morbidities on the occurrence of deaths in COVID-19 patients: A systematic review and meta-analysis. <i>Journal of Global Health</i> 2020;10(2):020503
Khateri 2020	Khateri, S.; Mohammadi, H.; Khateri, R.; Moradi, Y. The Prevalence of Underlying Diseases and Comorbidities in COVID-19 Patients; an Updated Systematic Review and Meta-analysis. <i>Archives of Academic Emergency Medicine</i> 2020;8(1):e72
Kow 2020	Kow, C. S.; Hasan, S. S. Mortality risk with preadmission metformin use in patients with COVID-19 and diabetes: A meta-analysis. <i>Journal of Medical Virology</i> . 2020. DOI: 10.1002/jmv.26498
Kumar 2020 (1)	Kumar, A.; Arora, A.; Sharma, P.; Anikhindi, S. A.; Bansal, N.; Singla, V.; Khare, S.; Srivastava, A. Is diabetes mellitus associated with mortality and severity of COVID-19? A meta-analysis. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(4):535-545
Kumar 2020 (2)	Kumar, A.; Arora, A.; Sharma, P.; Anikhindi, S. A.; Bansal, N.; Singla, V.; Khare, S.; Srivastava, A. Clinical Features of COVID-19 and Factors Associated with Severe Clinical Course: A Systematic Review and Meta-Analysis. <i>SSRN</i> 2020 Apr 21;3566166.doi: 10.2139/ssrn.3566166. Preprint
Lee 2020	Lee, Ming H.; Wong, Chloe; Ng, Cheng H.; Yuen, David C. W.; Lim, Amanda Y. L.; Khoo, Chin M. Effects of hyperglycaemia on complications of COVID-19: A meta-analysis of observational studies. <i>Diabetes Obes Metab</i> 2020. DOI: 10.1111/dom.14184
Li 2020 (1)	Li, J.; Huang, D. Q.; Zou, B.; Yang, H.; Hui, W. Z.; Rui, F.; Yee, N. T. S.; Liu, C.; Nerurkar, S. N.; Kai, J. C. Y.; Teng, M. L. P.; Li, X.; Zeng, H.; Borghi, J. A.; Henry, L.; Cheung, R.; Nguyen, M. H. Epidemiology of COVID-19: A systematic review and meta-analysis of clinical characteristics, risk factors, and outcomes. <i>Journal of Medical Virology</i> 2020 Aug 13;10.1002/jmv.26424. doi: 10.1002/jmv.26424. Online ahead of print.

Study ID	Citation
Li 2020 (2)	Li, P.; Wang, Y.; Peppelenbosch, M. P.; Ma, Z.; Pan, Q. Systematically comparing COVID-19 with 2009 influenza pandemic for hospitalized patients. <i>International Journal of Infectious Diseases</i> 2020;102:375–380
Li 2020 (3)	Li, B.; Yang, J.; Zhao, F.; Zhi, L.; Wang, X.; Liu, L.; Bi, Z.; Zhao, Y. Prevalence and impact of cardiovascular metabolic diseases on COVID-19 in China. <i>Clinical Research in Cardiology</i> 2020;109(5):531-538
Li 2020 (4)	Li, J.; He, X.; Yuan, Yuan; Zhang, W.; Li, X.; Zhang, Y.; Li, S.; Guan, C.; Gao, Z.; Dong, G. Meta-analysis investigating the relationship between clinical features, outcomes, and severity of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pneumonia. <i>American Journal of Infection Control</i> 2020;12. DOI: <a href="https://doi.org/10.1016/j.ajic.2020.06.008">https://doi.org/10.1016/j.ajic.2020.06.008</a>
Liu 2020 (1)	Liu, H.; Chen, S.; Liu, M.; Nie, H.; Lu, H. Comorbid Chronic Diseases are Strongly Correlated with Disease Severity among COVID-19 Patients: A Systematic Review and Meta-Analysis. <i>Aging &amp; Disease</i> 2020;11(3):668-678
Liu 2020 (2)	Liu, Y.; Wu, S.; Qin, M.; Jiang, W.; Liu, X. Prevalence of Cardiovascular Comorbidities in Coronavirus Disease 2019, Severe Acute Respiratory Syndrome, and Middle East Respiratory Syndrome: Pooled Analysis of Published Data. <i>Journal of the American Heart Association</i> 01 Sep 2020;9(17):e016812
Lu 2020	Lu, L.; Zhong, W.; Bian, Z.; Li, Z.; Zhang, K.; Liang, B.; Zhong, Y.; Hu, M.; Lin, L.; Liu, J.; Lin, X.; Huang, Y.; Jiang, J.; Yang, X.; Zhang, X.; Huang, Z. A comparison of mortality-related risk factors of COVID-19, SARS, and MERS: A systematic review and meta-analysis. <i>Journal of Infection</i> 2020;81(4):e18-e25
Lukito 2020	Lukito, A. A.; Pranata, R.; Henrina, J.; Lim, M. A.; Lawrensia, S.; Suastika, K. The Effect of Metformin Consumption on Mortality in Hospitalized COVID-19 patients: a systematic review and meta-analysis. <i>Diabetes and Metabolic Syndrome: Clinical Research and Reviews</i> 01 Nov 2020;14(6):2177-2183
Luo 2020	Luo, L.; Fu, M.; Li, Y.; Hu, S.; Luo, J.; Chen, Z.; Yu, J.; Li, W.; Dong, R.; Yang, Y.; Tu, L.; Xu, X. The potential association between common comorbidities and severity and mortality of coronavirus disease 2019: A pooled analysis. <i>Clinical Cardiology</i> . 2020. DOI: 10.1002/clc.23465
Mahumud 2020	Mahumud, R. A.; Kamara, J. K.; Renzaho, A. M. N. The epidemiological burden and overall distribution of chronic comorbidities in coronavirus disease-2019 among 202,005 infected patients: evidence from a systematic review and meta-analysis. <i>Infection</i> 2020;48(6):813-833
Mair 2020	Mair, M.; Singhavi, H.; Pai, A.; Singhavi, J.; Gandhi, P.; Conboy, P.; Baker, A.; Das, S. A meta-analysis of 67 studies with presenting symptoms & laboratory tests of COVID-19 patients. <i>The Laryngoscope</i> . 2020;17. DOI: 10.1002/lary.29207
Mantovani 2020	Mantovani, A.; Byrne, C. D.; Zheng, M. H.; Targher, G. Diabetes as a risk factor for greater COVID-19 severity and in-hospital death: A meta-analysis of observational studies. <i>Nutrition Metabolism &amp; Cardiovascular Diseases</i> 2020;30(8):1236-1248
Matsushita 2020	Matsushita, K.; Ding, N.; Kou, M.; Hu, X.; Chen, M.; Gao, Y.; Honda, Y.; Zhao, D.; Dowdy, D.; Mok, Y.; Ishigami, J.; Appel, L. J. The Relationship of COVID-19 Severity with Cardiovascular Disease and Its Traditional Risk Factors: A Systematic Review and Meta-Analysis. <i>Global heart</i> 2020;15(1):64
Mehraeen 2020	Mehraeen, E.; Karimi, A.; Barzegary, A.; Vahedi, F.; Afsahi, A. M.; Dadras, O.; Moradmand-Badie, B.; Seyed Alinaghi, S. A.; Jahanfar, S. Predictors of mortality in patients with COVID-19-a systematic review. <i>European Journal of Integrative Medicine</i> 2020;40:101226
Meng 2020	Meng, M.; Zhao, Q.; Kumar, R.; Bai, C.; Deng, Y.; Wan, B. Impact of cardiovascular and metabolic diseases on the severity of COVID-19: a systematic review and meta-analysis. <i>Aging</i> 2020;12(22):23409
Mesas 2020	Mesas, A. E.; Caverio-Redondo, I.; Alvarez-Bueno, C.; Sarria Cabrera, M. A.; Maffei de Andrade, S.; Sequi-Dominguez, I.; Martinez-Vizcaino, V. Predictors of in-hospital COVID-19 mortality: A comprehensive systematic review and meta-analysis exploring differences by age, sex and health conditions. <i>PLoS ONE [Electronic Resource]</i> 2020;15(11):e0241742
Miller 2020	Miller, L. E.; Bhattacharyya, R.; Miller, A. L. Diabetes mellitus increases the risk of hospital mortality in patients with Covid-19: Systematic review with meta-analysis. <i>Medicine</i> 2020;99(40):e22439

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Moula 2020	Moula, A. I.; Micali, L. R.; Matteucci, F.; Luca, F.; Rao, C. M.; Parise, O.; Parise, G.; Gulizia, M. M.; Gelsomino, S. Quantification of death risk in relation to sex, pre-existing cardiovascular diseases and risk factors in COVID-19 patients: Let's take stock and see where we are. <i>Journal of Clinical Medicine</i> September 2020;9(9):1-17
Mudatsir 2020	Mudatsir M, Fajar JK, Wulandari L et al. Predictors of COVID-19 severity: a systematic review and meta-analysis. <i>F1000Research</i> 2020, 9:1107 <a href="https://doi.org/10.12688/f1000research.26186.1">https://doi.org/10.12688/f1000research.26186.1</a>
Nandy 2020	Nandy, K.; Salunke, A.; Pathak, S. K.; Pandey, A.; Doctor, C.; Puj, K.; Sharma, M.; Jain, A.; Warikoo, V. Coronavirus disease (COVID-19): A systematic review and meta-analysis to evaluate the impact of various comorbidities on serious events. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(5):1017-1025
Noor 2020	Noor, F. M.; Islam, M. M. Prevalence and Associated Risk Factors of Mortality Among COVID-19 Patients: A Meta-Analysis. <i>Journal of community health</i> 01 Dec 2020;45(6):1270-1282
Pal 2020	Pal, R.; Banerjee, M.; Yadav, U.; Bhattacharjee, S. Clinical profile and outcomes in COVID-19 patients with diabetic ketoacidosis: A systematic review of literature. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(6):1563-1569
Palaodimos 2020	Palaodimos, L.; Chamorro-Pareja, N.; Karamanis, D.; Li, W.; Zavras, P. D.; Chang, K. M.; Mathias, P.; Kokkinidis, D. G. Diabetes is associated with increased risk for in-hospital mortality in patients with COVID-19: a systematic review and meta-analysis comprising 18,506 patients. <i>Hormones</i> 2020. <a href="https://doi.org/10.1007/s42000-020-00246-2">https://doi.org/10.1007/s42000-020-00246-2</a>
Parohan 2020	Parohan, M.; Yaghoubi, S.; Seraji, A.; Javanbakht, M. H.; Sarraf, P.; Djalali, M. Risk factors for mortality in patients with Coronavirus disease 2019 (COVID-19) infection: a systematic review and meta-analysis of observational studies. <i>Aging Male</i> 2020. DOI: 10.1080/13685538.2020.17747
Parveen 2020	Parveen, R.; Sehar, N.; Bajpai, R.; Agarwal, N. B. Association of diabetes and hypertension with disease severity in covid-19 patients: A systematic literature review and exploratory meta-analysis. <i>Diabetes Research &amp; Clinical Practice</i> 2020;166:108295
Patel 2020 (1)	Patel, U.; Malik, P.; Mehta, D.; Shah, D.; Kelkar, R.; Pinto, C.; Suprun, M.; Dhamoon, M.; Hennig, N.; Sacks, H. Early epidemiological indicators, outcomes, and interventions of COVID-19 pandemic: A systematic review. <i>Journal of Global Health</i> 2020;10(2):020506
Patel 2020 (2)	Patel, U.; Malik, P.; Usman, M. S.; Mehta, D.; Sharma, A.; Malik, F. A.; Khan, N.; Siddiqi, T. J.; Ahmed, J.; Patel, A.; Sacks, H. Age-Adjusted Risk Factors Associated with Mortality and Mechanical Ventilation Utilization Amongst COVID-19 Hospitalizations-a Systematic Review and Meta-Analysis. <i>SN Comprehensive Clinical Medicine</i> 2020. <a href="https://doi.org/10.1007/s42399-020-00476-w">https://doi.org/10.1007/s42399-020-00476-w</a>
Pinedo-Torres 2020	Pinedo-Torres, I.; Flores-Fernandez, M.; Yovera-Aldana, M.; Gutierrez-Ortiz, C.; Zegarra-Lizana, P.; Intimayta-Escalante, C.; Moran-Marinos, C.; Alva-Diaz, C.; Pacheco-Barrios, K. Prevalence of Diabetes Mellitus and Its Associated Unfavorable Outcomes in Patients With Acute Respiratory Syndromes Due to Coronaviruses Infection: A Systematic Review and Meta-Analysis. <i>Clinical Medicine Insights</i> 2020;13:1179551420962495
Pinto 2020	Pinto, L. C.; Bertoluci, M. C. Type 2 diabetes as a major risk factor for COVID-19 severity: a meta-analysis. <i>Archives of Endocrinology &amp; Metabolism</i> 2020;64(3):199-200
Plasencia-Urizarri 2020	Plasencia-Urizarri, T. M.; Aguilera-Rodriguez, R.; Almaguer-Mederos, L. E. Comorbidities and clinical severity of COVID-19: systematic review and meta-analysis. [Spanish]. <i>Revista Habanera de Ciencias Medicas</i> 2020;19(sUPL.):e3389.
Qui 2020	Qiu, P.; Zhou, Y.; Wang, F. et al. Clinical characteristics, laboratory outcome characteristics, comorbidities, and complications of related COVID-19 deceased: a systematic review and meta-analysis. <i>Aging Clin Exp Res</i> 32, 1869–1878 (2020). <a href="https://doi.org/10.1007/s40520-020-01664-3">https://doi.org/10.1007/s40520-020-01664-3</a>
Radwan 2020	Radwan NM, Mahmoud NE, Alfaifi AH, Alabdulkareem KI. Comorbidities and severity of coronavirus disease 2019 patients. <i>Saudi Med J.</i> 2020 Nov;41(11):1165-1174. doi: 10.15537/smj.2020.11.25454.
Rod 2020	Rod, J. E.; Oviedo-Trespacios, Oscar; Cortes-Ramirez, Javier. A brief-review of the risk factors for covid-19 severity. <i>Rev Saude Publica</i> 2020;54:60

Study ID	Citation
Roncon 2020	Roncon, L.; Zuin, M.; Rigatelli, G.; Zuliani, G. Diabetic patients with COVID-19 infection are at higher risk of ICU admission and poor short-term outcome. <i>Journal of Clinical Virology</i> 2020;127():104354
Sacks 2020	Sacks, L. J.; Pham, C. T.; Fleming, N.; Neoh, S. L.; Ekinci, E. I. Considerations for people with diabetes during the Coronavirus Disease (COVID-19) pandemic. <i>Diabetes Research &amp; Clinical Practice</i> 2020;166:108296
Sales-Peres 2020	Sales-Peres, S. H. C.; de Azevedo-Silva, L. J.; Bonato, R. C. S.; Sales-Peres, M. C.; Pinto, Acds; Santiago Junior, J. F. Coronavirus (SARS-CoV-2) and the risk of obesity for critically illness and ICU admitted: Meta-analysis of the epidemiological evidence. <i>Obesity Research &amp; Clinical Practice</i> 2020;14(5):389-397
Sanyaolu 2020	Sanyaolu, Adekunle; Okorie, Chuku; Marinkovic, Aleksandra; Patidar, Risha; Younis, Kokab; Desai, Priyank; Hosein, Zaheeda; Padda, Inderbir; Mangat, Jasmine; Altaf, Mohsin Comorbidity and its Impact on Patients with COVID-19. <i>SN Compr Clin Med</i> 2020. <a href="https://doi.org/10.1007/s42399-020-00363-4">https://doi.org/10.1007/s42399-020-00363-4</a>
Sathish 2020	Sathish, T.; Kapoor, N.; Cao, Y.; Tapp, R. J.; Zimmet, P. Proportion of newly diagnosed diabetes in COVID-19 patients: a systematic review and meta-analysis. <i>Diabetes, Obesity &amp; Metabolism</i> 2020;27():27
Sayed 2020	S.Sayed, COVID-19 and diabetes; Possible role of polymorphism and rise of telemedicine, <i>Prim.Care Diab.</i> (2020), <a href="https://doi.org/10.1016/j.pcd.2020.08.018">https://doi.org/10.1016/j.pcd.2020.08.018</a>
Sepandi 2020	Sepandi, M.; Taghdir, M.; Alimohamadi, Y.; Afrashteh, S.; Hosamirudsari, H. Factors Associated with Mortality in COVID-19 Patients: A Systematic Review and Meta-Analysis. <i>Iranian Journal of Public Health</i> 2020;49(7):1211-1221
Shang 2020	Shang L, Shao M, Guo Q, et al. Diabetes Mellitus is Associated with Severe Infection and Mortality in Patients with COVID-19: A Systematic Review and Meta-analysis. <i>Arch Med Res</i> , 2020;. <a href="https://doi.org/10.1016/j.arcmed.2020.07.005">https://doi.org/10.1016/j.arcmed.2020.07.005</a> . Online ahead of print.
Shoar 2020	Shoar, S.; Hosseini, F.; Naderan, M.; Mehta, J. L. Meta-analysis of Cardiovascular Events and Related Biomarkers Comparing Survivors Versus Non-survivors in Patients With COVID-19. <i>American Journal of Cardiology</i> 2020;135:50-61
Singh 2020 (1)	Singh, A. K.; Gupta, R.; Misra, A. Comorbidities in COVID-19: Outcomes in hypertensive cohort and controversies with renin angiotensin system blockers. <i>Diabetes &amp; Metabolic Syndrome</i> 2020;14(4):283-287
Singh 2020 (2)	Singh, A. K.; Gillies, C. L.; Singh, R.; Singh, A.; Chudasama, Y.; Coles, B.; Seidu, S.; Zaccardi, F.; Davies, M. J.; Khunti, K. Prevalence of co-morbidities and their association with mortality in patients with COVID-19: A systematic review and meta-analysis. <i>Diabetes, Obesity &amp; Metabolism</i> 2020;22:1915–1924 <a href="#">PubMed</a>
Singh 2020 (3)	Singh AK, Gupta R, Ghosh A, Misra A. Diabetes in COVID-19: Prevalence, pathophysiology, prognosis and practical considerations. <i>Diabetes Metab Syndr</i> . 2020 Jul-Aug;14(4):303-310. doi: 10.1016/j.dsx.2020.04.004. <a href="#">PubMed</a> Epub 2020 Apr 9.
Ssentongo 2020	Ssentongo, P.; Ssentongo, A. E.; Heilbrunn, E. S.; Ba, D. M.; Chinchilli, V. M. Association of cardiovascular disease and 10 other pre-existing comorbidities with COVID-19 mortality: A systematic review and meta-analysis. <i>PLoS ONE [Electronic Resource]</i> 2020;15(8): <a href="#">PubMed</a> e0238215
Tadic 2020	Tadic, Marijana; Cuspidi, Cesare; Sala, Carla. COVID-19 and diabetes: Is there enough evidence? <i>J Clin Hypertens (Greenwich)</i> 2020. DOI: 10.1111/jch.13912
Tan 2020	Tan, E.; Song, J.; Deane, A. M.; Plummer, M. P. Global impact of COVID-19 infection requiring admission to the intensive care unit: a systematic review and meta-analysis. <i>Chest</i> . 2020. DOI: <a href="https://doi.org/10.1016/j.chest.2020.10.014">https://doi.org/10.1016/j.chest.2020.10.014</a>
Tian 2020	Tian, W.; Jiang, W.; Yao, J.; Nicholson, C. J.; Li, R. H.; Sigurslid, H. H.; Wooster, L.; Rotter, J. I.; Guo, X.; Malhotra, R. Predictors of mortality in hospitalized COVID-19 patients: A systematic review and meta-analysis. <i>Journal of Medical Virology</i> 2020;05():22
Varikasuvu 2020	Varikasuvu, S. R.; Dutt, N.; Thangappazham, B.; Varshney, S. Diabetes and COVID-19: A pooled analysis related to disease severity and mortality. <i>Primary Care Diabetes</i> . 2020. <a href="https://doi.org/10.1016/j.pcd.2020.08.015">https://doi.org/10.1016/j.pcd.2020.08.015</a>

Study ID	Citation
Venkata 2020	Venkata, V. S.; Kiernan, G. Covid-19 and Copd: Pooled Analysis of Observational Studies. Chest October 2020;158 (4 Supplement):A2469
Wang 2020 (1)	Wang, Xinhui; Fang, Xuexian; Cai, Zhaoxian; Wu, Xiaotian; Gao, Xiaotong; Min, Junxia; Wang, Fudi. Comorbid Chronic Diseases and Acute Organ Injuries Are Strongly Correlated with Disease Severity and Mortality among COVID-19 Patients: A Systemic Review and Meta-Analysis. Research (Wash D C) 2020. <a href="https://doi.org/10.34133/2020/2402961">https://doi.org/10.34133/2020/2402961</a>
Wang 2020 (2)	Wang B, Li R, Lu Z, Huang Y. Does comorbidity increase the risk of patients with COVID-19: evidence from meta-analysis. Aging (Albany NY). 2020; 12:6049-6057. <a href="https://doi.org/10.18632/aging.103000">https://doi.org/10.18632/aging.103000</a>
Wang 2020 (3)	Wang, X.; Wang, S.; Sun, L.; Qin, G. Prevalence of diabetes mellitus in 2019 novel coronavirus: A meta-analysis. Diabetes Research & Clinical Practice 2020;164():108200
Wicaksana 2020	Wicaksana, Anggi Lukman; Hertanti, Nuzul Sri; Ferdiana, Astri; Pramono, Raden Bowo. Diabetes management and specific considerations for patients with diabetes during coronavirus diseases pandemic: A scoping review. Diabetes Metab Syndr 2020. <a href="https://doi.org/10.1016/j.dsx.2020.06.070">https://doi.org/10.1016/j.dsx.2020.06.070</a>
Wu 2020	Wu, Z. H.; Tang, Y.; Cheng, Q. Diabetes increases the mortality of patients with COVID-19: a meta-analysis. Acta Diabetologica. 2020. <a href="https://doi.org/10.1007/s00592-020-01546-0">https://doi.org/10.1007/s00592-020-01546-0</a>
Xu 2020	Xu, L.; Mao, Y.; Chen, G. Risk factors for 2019 novel coronavirus disease (COVID-19) patients progressing to critical illness: a systematic review and meta-analysis. Aging 2020;12(12):12410-12421
Yanai 2020	Yanai, Hidekatsu. Metabolic Syndrome and COVID-19. Cardiol Res 2020;11(6):360-365
Yang 2020	Yang, J.; Zheng, Y.; Gou, X.; Pu, K.; Chen, Z.; Guo, Q.; Ji, R.; Wang, H.; Wang, Y.; Zhou, Y. Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: a systematic review and meta-analysis. International Journal of Infectious Diseases 2020;94:91-95
Yifan 2020	Yifan, C.; Jun, P. Understanding the Clinical Features of Coronavirus Disease 2019 From the Perspective of Aging: A Systematic Review and Meta-Analysis. Frontiers in Endocrinology 2020;11:557333
Zaki 2020	Zaki, N.; Alashwal, H.; Ibrahim, S. Association of hypertension, diabetes, stroke, cancer, kidney disease, and high-cholesterol with COVID-19 disease severity and fatality: A systematic review. Diabetes & Metabolic Syndrome 2020;14(5):1133-1142
Zhao 2020 (1)	Zhao, Xianxian; Zhang, Bili; Li, Pan; Ma, Chaoqun; Gu, Jiawei; Hou, Pan; Guo, Zhifu; Wu, Hong; Bai, Yuan. Incidence, clinical characteristics and prognostic factor of patients with COVID-19: a systematic review and meta-analysis. MedRxiv 2020
Zhao 2020 (2)	Zhao, J.; Li, X.; Gao, Y.; Huang, W. Risk factors for the exacerbation of patients with 2019 Novel Coronavirus: A meta-analysis. International Journal of Medical Sciences 2020;17(12):1744-1750
Zheng 2020	Zheng, Z.; Peng, F.; Xu, B.; Zhao, J.; Liu, H.; Peng, J.; Li, Q.; Jiang, C.; Zhou, Y.; Liu, S.; Ye, C.; Zhang, P.; Xing, Y.; Guo, H.; Tang, W. Risk factors of critical & mortal COVID-19 cases: A systematic literature review and meta-analysis. Journal of Infection 2020;81(2):e16-e25
Zhou 2020 (1)	Zhou, X.; Cheng, Z.; Shu, D.; Lin, W.; Ming, Z.; Chen, W.; Hu, Y. Characteristics of mortal COVID-19 cases compared to the survivors. Aging 2020, Vol 12, Advance
Zhou 2020 (2)	Zhou, Y.; Yang, Q.; Chi, J.; Dong, B.; Lv, W.; Shen, L.; Wang, Y. Comorbidities and the risk of severe or fatal outcomes associated with coronavirus disease 2019: A systematic review and meta-analysis. International Journal of Infectious Diseases 2020;99:47-56



Supplemental Table 2. Key characteristics of included reviews

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Abdi 2020	This study aims to summarize the evidence about diabetes and COVID-19 outbreak through a systematic review and meta-analysis approach.	Studies considered focused on those that reported diabetes in COVID-19 patients.	3	Scopus, PubMed, Science direct, and Web of science	Prevalence, discuss severity and mortality narratively in text.	27 studies included overall, 18 for pooled analysis for prevalence of diabetes.	Not reported	Not reported	Majority in China
Aggarwal 2020	We carried out a pooled analysis of current studies for evaluating potential associations between DM and infection severity outcomes in COVID-19 patients.	Studies were included if they fulfilled the following criteria: (1) Report history of DM in COVID-19 patients; (2) report outcomes of interest; (3) sample size >10.	3	PUBMED, EMBASE and CENTRAL	Severe disease (undefined), death	16 in total 12 reporting on severe vs less severe COVID cases 4 reporting on non-survivors vs survivors	Severe vs non-severe comparison: 2564 Non-survivors vs survivors comparison: 618	Not reported	China
Apicella 2020	Not explicitly stated - overall aim (from title) to understand the reasons for worse outcomes in people with diabetes	Not explicitly stated	6	PUBMED, and Google Scholar for additional references.	Prevalence, severity, mortality, glycaemic control, DPP4 - all discussed narratively in text	Not reported	Not reported	Not reported	China, UK, France, Italy
Awortwe 2020	A meta-analysis on COVID-19 clinical studies which characterized the epidemiological or clinical features of	Selection criteria for the analysis focused exclusively on clinical studies characterizing the	6	PubMed, Medline, Scopus and google scholar	Disease severity, mortality, ICU admission,	24	5586	Not reported	1 Iran, 1 Israel, rest china

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	affected patients with comorbidities independent of pharmacological interventions.	clinical or epidemiological features of COVID-19 patients.							
Bajgain 2020	To explore prevalence of comorbidities and adverse outcomes among individuals with Covid-19	Published primary literature about comorbidities and Covid-19, studies include patient dataset with major comorbidities including HTN, CVD, COPD, CKD, malignancy and/or diabetes	5	PubMed, MEDLINE, EMBASE, SCOPUS, google scholar	Prevalence in Covid-19 population, association with Covid-19 fatality	27	22753	2 studies from long term facilities, rest unclear	China (18 of 27), S Korea, Italy, Mexico, US, UK, Iran
Baradaran 2020	Study assessed prevalence of co-morbidities in confirmed COVID-19 patients. Found 11% had diabetes mellitus	All studies that reported the prevalence of comorbidities among the confirmed COVID-19 patients were included. There was no language restriction	4	EMBASE, PubMed, and google scholar	Prevalence of comorbidities	33 studies extracted (29 studies with data on diabetes prevalence)	9249	Not reported	32 papers from China, 1 paper from Taiwan
Barrera 2020	We systematically assessed the prevalence of diabetes and hypertension in patients with Covid-19 after excluding repeated patients across studies and analysed the associated risks for Covid-19 severity, intensive care unit (ICU) admission and mortality	Observational and interventional studies that reported the frequency of diabetes and/or hypertension in adult population with Covid-19. For our second aim, we included studies	4	Ovid Medline In-Process & Other Non-Indexed Citations, Ovid Medline, Ovid Embase, Ovid	Prevalence, severity, ICU admission, mortality, subgrouping diabetes plus HTN	65 studies overall 31 studies looked at prevalence of diabetes	15,794 overall 12,870 looked at prevalence of diabetes	88% inpatient setting	71% from China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		that reported exposure-outcome association as univariate or multivariate analysis, with diabetes, hypertension being the exposure , and severe Covid -19 through ICU admissions or mortality being the outcome of interest.		Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus.					
Bennett 2020	Determine systematically the evidence from studies of more than 100 adult patients that reported clinical features and outcomes of those affected by COVID-19.	Studies that report on one or more of: clinical features of patients, comorbidities of patients, radiological findings for patients and outcomes for patients. Sample sizes bigger than 100. laboratory confirmed diagnosis of Covid-19	4	MEDLINE, EMBASE	Prevalence of diabetes in Covid-19 population	45	14358	Hospital admissions	China (42 of 45), US, Europe
Boddu 2020	In this review, we explore the mechanisms of hyperglycaemia particularly in relation to COVID 19 illness and also examine the Covid-19 related morbidity and mortality in people with T1DM.	Not explicitly stated	10	Medline (PubMed), Scopus, and Google Scholar	Prevalence (new onset), Mortality by HbA1C and by Type 1 and Type 2 diabetes	2 nationwide analyses in the UK (Mortality Type 1 vs Type 2 and by	Not reported	Not reported	UK

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
						HbA1C) 1 multicentre study in the UK (prevalence of new onset)			
Chen 2020	This meta-analysis aimed to summarize available data on the association between glycaemic parameters and severity of COVID-19	Observational studies investigating blood glucose or glycated haemoglobin A1c (HbA1c) according to the severity of COVID-19 were considered for inclusion.	5	PubMed, Embase and the Cochrane Library	Severe COVID (defined as those who required mechanical ventilation, intensive care unit admission or those who died) by blood glucose and HbA1C	3 studies, 1 with 100% diabetes, 2 mixed populations	222 COVID patients (131 severe, 91 mild)	Not reported	China
Chidambaram 2020	Sought to better understand the clinical, laboratory and radiological parameters associated with mortality and disease severity among patients with COVID-19.	Observational studies that included patients with microbiologically confirmed SARS-CoV-2 infection, all studies that reported a direct comparison of clinical, laboratory or radiologic characteristics between a) patients who died and those who survived or b) patients with severe disease and	5	Pubmed, EMBASE, WHO covid database	association with mortality, association with severe disease (defined by based on the American Thoracic Society guidelines for the treatment of Community-acquired Pneumonia or the Chinese National Health Commission guidelines for the Treatment of Novel Coronavirus infection	108	Risk of mortality: 20296 severity of disease: 17992	Hospital admissions	Risk of mortality: 32 studies from China, six from the United States, two from Spain, one from the United Kingdom, one from Iran and a multi-country study. Severe disease: seventy-one studies from China and one study from Italy

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		those without severe disease.							
Chowdhury 2020	This narrative review attempts to address key questions regarding COVID-19 and T1D.	Not explicitly stated	5	Pubmed	Risk of infection discussed, mortality, mortality by HbA1C and obesity	2 (with relevant data)	Not reported	Not reported	UK
Costa 2020	Providing overview of metabolic changes associated with metabolic syndrome and its relationship with development and worsening of SARS-CoV-2 infection, as well as to review the proposed drugs for the treatment of these patients.	Not stated (just state search terms of obesity, diabetes, liver, NAFLD, hypertension, cardiovascular disease, chloroquine, hydroxychloroquine, antiretroviral drugs, and treatment of coronavirus	6	Pubmed, Google Scholar	Prevalence, severity and mortality discussed narratively in text.	Not stated; approximately 5 narratively discussed	Not reported	Not reported	not stated; 1 narratively mentioned Wuhan, China
d'Annunzio 2020	The aim of our study was to analyse available data about COVID-19 infections and type 1 diabetes mellitus, and to formulate recommendations for children and adolescents with or who may develop type 1 diabetes mellitus in the time of Covid-19 infection.	Not reported	5	Medline and Embase	Risk of infection and severity of outcomes discussed	No studies cited which relate to the review question. One relevant statement not cited. Focus on children and adolescents but papers	Not reported	Not reported	Not reported

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
						cited from adults also.			
de Almeida-Pititto 2020	The aim of this study is to evaluate the association of diabetes, hypertension, cardiovascular disease and ACEI/ARBs exposure with severity (intensive care unit treatment or mechanical ventilation < 90%), or mortality from COVID-19 infection.	Observational studies that met the following criteria were included: (1) study design (cross-sectional, self-controlled case series or retrospective cohort studies); (2) presence of the following comorbidities (diabetes mellitus, hypertension or cardiovascular disease); (3) use of ACE inhibitors and/or ARB.	5	PubMed, Cochrane Library and Scielo	Severity, mortality	18 for severity outcome 10 for mortality outcome	4305 for severity outcome 4247 for mortality outcome	Hospital (only included in-hospital deaths)	35/40 studies (40 is total for HTN, CVD as well as DM) were from China and 5 were from France, Italy, Greece, and the USA.
Del Sole 2020	As clinical and laboratory characteristics associated with severe SARS-CoV-2 infection are not completely clarified, we performed a systematic review and meta-analysis of the data so far reported in SARS-CoV-2-infected patients to identify clinical and laboratory variables associated with a high-risk ARDS, ICU or poor survival.	Clinical studies in patients with SARS-CoV-2 infection that reported comorbidities and laboratory analysis of patients distinguished in severe vs non-severe infection	5	PubMed, ISI Web of Science, SCOPUS and Cochrane database.	Severity (ARDS, ICU admission, deaths)	12	2794 patients of which 596 had severe disease	Not reported	11/12 studies from China, 1/12 from the Netherlands

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Deravi 2020	Therefore, this review aimed to elucidate the role and underlying mechanisms of chronic conditions, including DM and hypertension, in clinical manifestations and disease severity of COVID-19, MERS and SARS.	We included all observational studies conducted on diabetic and/or hypertensive adult patients with confirmed COVID-19, SARS, and MERS	3	Pubmed, Google Scholar, Excerpta Media Database (EMBASE), Web of Science and ResearchGate	Not reported	Not reported	Not reported	Not reported	Not reported
Desai 2020	The objective of this study was to evaluate the pooled estimate of diabetes prevalence in young (<50 years) versus elderly (>50 years) COVID-19 cohorts.	Literature search until March 2020, all eligible studies reporting frequency of diabetes mellitus were included	3	PubMed, Scopus and Web of Science	The overall prevalence of diabetes in studies including COVID-19 patients, in patients with a mean age >50 vs <50	11	2084	Not reported	Not reported
Deshmukh 2020	To summarize the updated epidemiology, causes, clinical manifestation and diagnosis, as well as prevention and control of the novel coronavirus SARS-CoV-2.	Not reported	Not reported	PubMed, Medline, Web of Science, Google Scholar and World Health Organization-WHO	Mortality	Not reported	Not reported	Not reported	Not reported
Du 2020	To systematically evaluate the prevalence of diabetes among COVID-19 patients in China and its impact on clinical outcomes, including ICU admission, progression to severe cases, or death.	The inclusion criteria for articles in the meta-analysis included: (1) Cross-sectional studies or cohort studies; and (2) Studies that	3	PubMed, Web of Science, Embase	Prevalence, severity, ICU admission, death	23	49564 COVID-19 patients (1573 with and 47991 without diabetes)	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		reported the prevalence of diabetes in COVID-19 patients.							
Emami 2020	The current meta-analysis aimed to estimate the prevalence of underlying disorders in hospitalized COVID-19 patients.	Any relevant articles that reported clinical characteristics and epidemiological information on infected patients were included in the analysis.	2	PubMed, Scopus, Web of Science, Google scholar, and Embase	Prevalence	10	3403	Hospital	China
Espinosa 2020	The aim of this meta-analysis was to calculate the prevalence and geographical distribution of comorbidities in all patients admitted to intensive care units (ICUs), and the mortality rate of COVID-19.	This review considered studies that conducted epidemiological and clinical descriptions in patients and in fatal cases from different parts of the world, in order to determine the prevalence and geographic distribution of comorbidities in patients affected by COVID-19.	5	Latin American and Caribbean Health Sciences Literature (LILACS), the bibliographic database of the US National of Medicine (Medline), the Elsevier database (EMBASE), Web of Science and SCOPUS.	ICU admission, mortality and prevalence	42, 39 of which were analysed for prevalence	89,238	Not reported	2 Korea, 2 USA, 1 India, 1 Italy, 1 Singapore, the rest China
Fadini 2020	We show results of a meta-analysis of studies reporting the prevalence of diabetes among people infected with	Not reported	3	Not reported	Prevalence, severity (severe, progressed, ICU admission, death)	12	2108	Hospital (8/12)	China



Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	the SARS-CoV-2 and its impact on disease severity or progression.								
Faghir-Gangi 2020	The present study estimated the pooled prevalence of diabetes in patients with COVID-19.	All cross-sectional studies reporting prevalence of diabetes in patients with COVID-19 were eligible for the study. There was no limitation in the time and language of the published papers.	4	Web of Science, Scopus and PubMed	Prevalence	20	5515 COVID-19 patients, 578 with diabetes	Not reported	12/20 from Wuhan, 6/20 rest of China, 2 elsewhere (France, USA)
Fang 2020	A systematic review and meta-analysis were conducted, seeking to collect and comprehensively evaluate the associations of epidemiological, co-morbidity factors with the severity and prognosis of COVID-19	Studies were eligible for inclusion in this meta-analysis if they met the following criteria: (data published in a peer reviewed journal in English or Chinese); (2) the study is a case-control, cohort or cross-sectional design in human beings; (3) the studies provide sufficient information for epidemiological, comorbidity factors with severity or prognosis of COVID-19	4	PubMed, medRxiv and bioRxiv	Severity of COVID-19 Death ICU Admission ARDS Invasive Ventilation Disease Progression	69 in qualitative analysis 61 in quantitative analysis	Not stated	Hospital	China (with 1 study in Singapore)

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Figliozi 2020	We reviewed available evidence and provided pooled estimates on predictors of clinical outcomes in patients with COVID-19	We included published peer-reviewed, pre-proof articles and papers published ahead of print which reported Covid-19 cases along with pre infection comorbidities and demographical, laboratory, and clinical information.	4	PubMed/Medline and Scopus	Severity (composite), mortality	49	20211	Not reported	Multiple
Flaherty 2020	This narrative review article will focus on the issues facing adults with predisposing medical conditions, especially cardiorespiratory and metabolic, in an effort to provide greater clarity to the travelling public and guidance to their healthcare providers.	The final reference list was agreed by all authors on the basis of its relevance to the topics covered in this review, with the aim of exploring the clinical presentation and complications of COVID-19 in patients with comorbid conditions.	6	PubMed	Severity, death, and by obesity and glycaemia	130 relevant publications (looking at a number of different comorbidities)	Not reported	Not reported	Not reported
Gallo Marin 2020	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported
Gold 2020	In this systematic review, we aimed to assess the epidemiological characteristics of comorbidities in patients infected with SARS-CoV-2. Furthermore, we aimed to evaluate comorbidities	(1) Studies with patients of all ages with confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)	4	PubMed and EmBase	Prevalence, severity and mortality.	33	29,096	Not reported	China, 1 Europe, 1 Singapore, 3 USA, 2 Korea, 1 India, 1 Australia, 1 Netherlands

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	associated with severe COVID-19 disease/mortality.	infection. (2) Prospective and retrospective case series, retrospective cohort studies, and epidemiological governmental situation reports.							
Guler 2020	In this review, we have aimed to focus on the most common co-morbidities in patients with COVID-19 and their possible roles in disease progression	We included case reports, retrospective studies, systematic reviews, meta-analyses, clinical guidelines and recommendations	5	Pubmed and Google Scholar	Labratory Measures Prevalence Case-fatality	Not stated	Not stated	Not stated	Not stated
Guo 2020	Diabetes mellitus has been reported to be one of the most prevalent comorbidity inpatients with Coronavirus Disease 2019 (COVID-19). We aimed to assess the association of comorbid diabetes with COVID-19 severity or mortality in China.	All research articles in adult patients diagnosed with COVID-19; with direct or indirect information on the outcome of disease severity or mortality grouped by comorbid diabetes; conducted in Mainland China and published between January 01 and May 30, 2020.	5	PubMed, Web of Knowledge, medRxiv, and bioRxiv for English-language literatures, the China National Knowledge Infrastructure (CNKI) and the Wanfang database for Chinese-language publications.	Disease severity or death (8/9 studies report severity, 1/9 reports deaths)	9	8807 COVID patients, 1070 patients with diabetes	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Hariyanto 2020	This study aims to analyse the potential association between metformin use and the mortality rate from COVID-19 infection.	All articles identified that matched the search criteria were assessed, and those reporting the rate of metformin use in COVID-19 patients with a clinically validated definition of "mortality" were included in this meta-analysis.	9	Google Scholar	Mortality by metformin	5	6937	Not reported	USA and China
Hartmann-Boyce 2020	To consider direct and indirect risks posed to PWD by COVID-19 and management considerations for PWD both with and without COVID-19 infection.	Not reported	Not reported	Not reported	Prevalence, disease severity, outcomes by blood glucose	Three SRs and 2 primary studies report on prevalence Four SRs, 6 cohorts report on severity 5 primary studies report on glucose and outcomes	Not reported for all studies	Not reported for all studies although majority from hospital settings	Multiple
Hu 2020	To evaluate the risk factors of COVID-19. Aim was to "describe epidemiological, clinical characteristics, complications, and outcomes of patients confirmed to have 2019-nCoV infection, and to	Randomized controlled trial, clinical trials, and series cases; patients who were of either sex and had been diagnosed with	3	Medline, Sino Med, EMBASE, and Cochrane Library data bases	Most prevalent clinical symptoms. Prevalence of comorbidities Risks of severity and mortality rates. Percentage of severe cases in	21 included in qualitative and quantitative synthesis	47,344 patients (24,419 male and 22,925 females)	Not reported	Singapore and China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	compare the severity between diabetes or hypertension and non-diabetes or non-hypertension patients"	COVID-19; all patients with laboratory-identified SARS-CoV-2 infection; clear description of the clinical characteristics such as comorbidities; clear description of the outcomes including			patients with diabetes and hypertension				
Huang 2020	We conducted a systematic review and meta-analysis in order to investigate the association between DM and poor outcome in patients with COVID-19 pneumonia.	adult patients diagnosed with COVID-19 with information on DM and clinical grouping or outcome of the clinically validated definition of mortality, severe COVID-19, ARDS, ICU care, and disease progression.	4	PubMed and EuropePMC, MEDLINE	Mortality, severe COVID, ICU care, composite poor outcome	30	6452	Not reported	Not reported
Hussain 2020	We aimed to briefly review the general characteristics of the novel coronavirus (SARS-CoV-2) and provide a better understanding of the coronavirus disease (COVID-19) in people with diabetes, and its management	Not reported	4	PubMed and Google Scholar	Prevalence, severe COVID, mortality	Not reported	Not reported	Not reported	Not reported
Hussain 2020	Evidence suggests diabetes to be a risk factor for the progression and poor prognosis of COVID-19.	We selected all those studies that reported the prevalence of	4	PubMed, MEDLINE	Prevalence, ICU admission, mortality	43	23007 overall. Detail for each included study in Table 1.	Not reported	Detail for each included study in Table 1.

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	Therefore, we aimed to understand the pooled prevalence of diabetes in patients infected with COVID-19. We also aimed to compute the risk of mortality and ICU admissions in COVID-19 patients with and without diabetes.	diabetes and associated outcomes (mortality, ICU admission) in confirmed COVID-19 patients. We included only published peer-reviewed studies that had presented their findings on at least ten confirmed COVID-19 patients.							
Izcovich 2020	The objective of our systematic review is to identify prognostic factors that may be used in decision-making related to the care of patients infected with COVID-19	We included studies that assessed patients with confirmed or suspected SARS-CoV-2 infectious disease and examined one or more prognostic factors for mortality or disease severity.	4	n PubMed/MEDLINE, the Cochrane Central Register of Controlled Trials (CENTRAL) and Embase.	Diabetes Mortality in COVID and prevalence of diabetes in severe COVID	207	75607	Not reported	12 different countries (China, USA, Canada, Spain, France, Turkey, Korea, Japan, Italy, Germany, India and Singapore).
Javanmardi 2020	The aim of current study is evaluating the prevalence of underlying disease in died people with COVID-19.	Included criteria were defined as follow: any articles about death related to COVID-19, studies which reported underlying diseases in died patients.	6	International database including PubMed, Scopus, Web of Science, Cochrane and google scholar	Severity of disease and high mortality rate	32	2431	Not reported	Majority in China
Kaur 2020	The primary aim of this study was to evaluate the	Peer-reviewed published articles	4	PubMed	Prevalence	50	6635	Not reported	Multiple

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	epidemiological and clinical characteristics of COVID-19 patients while also highlighting the comorbidities and radiological findings.	that reported cases with confirmed SARS-CoV-2 infection and have details on demographics, clinical symptoms, imaging features, and coexisting comorbidities. All studies that had information on above mentioned characteristics in COVID-19 patients were included							
Khan 2020	This study aimed to assess the prevalence of pre-existing comorbidities among COVID-19 patients and their mortality risks with each category of pre-existing comorbidity.	(i) conducted for the hospitalized patients infected with COVID-19 with or without pre-existing comorbidities, (ii) presented survivor and non-survivor counts following COVID-19 among patients with or without pre-existing morbidity or presented hazard/risk/odds ratio of deaths or survival following COVID-19 with the types of morbidities, and (iii)	5	Medline, Web of Science, Scopus, and CINAHL	Prevalence and mortality	41	27,670	not reported	Majority in China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		published in the English language.							
Khateri 2020	The aim of this study was to determine the prevalence of underlying diseases and associated comorbidities in COVID-19 patients using a systematic review and meta-analysis.	In this study, full-text articles published as original research in scientific journals were selected in the first step.	7	PubMed (including Medline), Web of Science, Scopus, CINAHL and Embase	Prevalence	12	2393	Not reported	China
Kow 2020	We performed a meta-analysis of the current studies to explore whether the use of metformin was associated with decreased mortality in COVID-19 patients.	Cohort or case-control design, included patients with confirmed COVID-19, and with data available to compare the risk of mortality among metformin users compared to non-metformin users in adjusted analyses.	8	PubMed, Scopus, Goggle Scholar, me dRxiv	Mortality by metformin use	5	8121	States hospitalised for COVID-19	2 USA, 2 China, 1 France
Kumar 2020 (1)	This meta-analysis was conducted with the primary objective of exploring the relationship between underlying diabetes and severity and mortality of COVID-19 disease; and with the secondary objective of determining the prevalence of diabetes inpatients with COVID-19.	(1) The studies should be in English language in the PubMed database. (2) The study design should be case-control and should have categorized the patients into two or more groups depending on the severity, clinical course, or mortality of the patients with	4	PubMed only	Prevalence, severe disease, mortality	33	16003	Reported for individual studies in table 1	Reported for individual studies in table 1



Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		COVID-19 (i.e. composite endpoint). Studies without this categorization were not included. The study should have data of diabetes mellitus in each group. (3) The study should be observational (4) The study should have included at least 100 patients of COVID-19.(5) The participants should be adult patients							
Kumar 2020 (2)	This systematic review and meta-analysis were conducted with following objectives: (1) to study the demographic, clinical and laboratory manifestations of COVID-19; and (2) to determine the factors associated with severe clinical course of COVID-19	(1) The studies should be in English language; (2) The studies should be published in full (3) the study design should be retrospective or prospective observational or case control study (4) the participants should be adult patients with COVID-19 disease.	3	PubMed	Association of co-morbidities with severe clinical course	58	6892	Not reported	China, Hong Kong, Singapore, South Korea, Australia and Europe - NB 97.5% of patients included were from mainland china
Lee 2020	This meta-analysis aims to determine if hyperglycaemia may be associated with an	Original articles that examined the severity of COVID-19 in	Not reported	PubMed, Embase and China National	ICU admission and mortality by hyperglycaemia	8	681 with diabetes and hyperglycaemia	Not reported	Not reported

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	increased severity of COVID-19.	hyperglycaemic patients, determined by variables such as mortality and ICU admissions were included.		Knowledge Infrastructure					
Li 2020 (1)	The aim of this systematic review and meta-analysis aims to elucidate regional variations in baseline clinical characteristics, presentation and factors associated with outcomes in COVID-19 patients including sub-group analysis by country/region and by disease severity	Original research articles were included if they fulfilled the following criteria: (1) laboratory confirmed COVID-19 and (2) if the study provided information about clinical features and outcomes of COVID-19.	4	PubMed, Embase, Scopus, the Cochrane library, the Chinese Medical Journal, BioRxiv, MedRxiv	Association of comorbidities with severe clinical course Association of comorbidities with mortality from COVID-19	212	281,461	Hospital/Tertiary Care	Mainland China 180, USA 8, South Korea 6, Singapore 3, Italy 3, Taiwan 3, UK 2, Hong Kong 2, Canada 1, Japan 1, Vietnam 1, and more than one country/region 2
Li 2020 (2)	The current study performed a systematic review and meta-analysis to comprehensively compare the burden and key clinical features of hospitalized patients between the 2009 influenza and COVID-19 pandemic	Studies were included if they met the following criteria: i) they contained clinical characteristics of SARS-CoV-2-confirmed patients and ii) they contained clinical characteristics of 2009 pandemic H1N1 influenza-confirmed patients	Not reported	Medline, Embase, Web of Science, Cochrane CE NTRAL, and Google scholar	Prevalence of diabetes as a comorbidity in hospitalised COVID patients	113 - others were regarding influenza as opposed to COVID-19	36,422	Hospital	Not stated
Li 2020 (3)	The aim of this analysis is to determine the association of	(1) comparative studies: randomised	2	EMBASE and PubMed	Proportions of diabetics in COVID-19 patients	6	1527	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	cardiovascular metabolic diseases with the development of COVID-19.	controlled trials RCTs or non-RCTs published in English; (2) study population: more than ten participants (3) patients in the studies should be confirmed to have been infected by 2019 novel coronavirus; (4) parameters: the comorbidities of cardiovascular metabolic diseases and the outcome of cardiac injury should be given			as well as the incidence of diabetes in severe/ICU cases vs non-icu/non-severe cases				
Li 2020 (4)	We aimed to investigate the relationship between clinical characteristics, outcomes and the severity of severe acute respiratory syndrome coronavirus 2 pneumonia.	(1) cohort studies or case-control studies reporting the clinical characteristics of patients with SARS-CoV2infection; (2) one or more clinical features were analysed, including epidemiology, clinical symptoms, laboratory findings, comorbidities, treatment, complications, and	4	PubMed, Embase, and Cochrane Library	Severity of COVID	12	2,445	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		outcomes; and (3) patients were grouped according to the severity of disease, for example, severe and non-severe groups or ICU and non-ICU groups.							
Liu 2020 (1)	This present study was aimed to provide a systematic evaluation and detailed estimate on the prevalence and effects of pre-existing chronic conditions in COVID-19 patients. This assessment may aid the public health sector while developing policies for surveillance, preparedness, and response to COVID-19 and its severe outcomes.	Articles describing the epidemiological, demographic, clinical features, outcomes and reporting the prevalence of chronic diseases in COVID-19 patient	4	PubMed, Ovid MEDLINE, EMBASE, CDC, and NIH databases later an additional eight reports were identified from a search of the bibliographies of previously obtained articles and other sources such as Google, Google Scholar,	incidence of comorbid disease in patients with covid-19, association between pre-existing chronic diseases and clinical outcomes (disease severity, admittance to ICU and mortality rate) in patients with COVID-19	24	10948	Not reported	Among them, 20 studies were from China, 2 from United States, 1 from Italy, and 1 from France.

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Liu 2020 (2)	The present study was undertaken to provide a systematic evaluation and detailed estimate of the prevalence of cardiovascular comorbidities (hypertension, cardiac disease, and diabetes mellitus) in SARS, MERS and COVID-19 cases.	Articles were eligible for inclusion if they met the following criteria: (1) those that were clinical studies or consecutive cases about human; (2) required clinical data could be extracted from articles; and (3) at least 3 cases were reported in an article.	4	MEDLINE via PubMed, Embase, Web of Science, and the Cochrane Library	Prevalence	12 for COVID-19	51268 for COVID-19	Not reported	Not reported
Lu 2020	Coronavirus Disease 2019 (COVID-19) is a pandemic. This systematic review compares mortality risk factors including clinical, demographic and laboratory features of COVID-19, Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). The aim is to provide new strategies for COVID-19 prevention and treatment	(I) Studies included patients infected by SARS-CoV-2, SARS-CoV, and MERS-CoV. (II) Patients in the studies had clinical outcomes including death. (III) Studies reported demographic characteristics, clinical manifestations, laboratory indicators and imaging. (IV) Articles were written in either Chinese or English.	4	MEDLINE, EPISTEMONIKOS, COCHRANE, China National Knowledge Infrastructure and WANFANG STATA	mortality	28 studies (including SARS and MERS only and studies only looking at lab indicators)  5 studies regarding diabetes	11818 COVID patients (looking at lab indicators as well, patients looking only at diabetes-2307	Not reported	Beijing, Guangdong, Shanxi, Hong Kong and Taiwan in China, and Toronto

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Lukito 2020	In light of paucity regarding high-quality data of metformin consumption and mortality in COVID-19 patients, we want to explore the state-of-the-art evidence regarding this critical topic through this systematic review and meta-analysis.	primarily observational studies (cross-sectional, case-control, retrospective/prospective cohort studies) that reported the odds ratios (ORs) or hazard ratios (HRs) in adjusted and non-adjusted forms regarding patients who consume metformin vs who did not.	9	Pubmed, EuropePMC, EBSCOhost, Proquest, Cochrane library, preprint.org and Medrxiv	Mortality by metformin	9	10233	Hospital	3 from USA, 2 from UK, 2 from China, 1 from South Korea, 1 from France
Luo 2020	In this study, we conducted a systematic review of available studies to assess the association between underlying comorbidities and acute cardiac injury and the severity or the prognosis in COVID-19 patients. The underlying comorbidities and cardiac injury may be associated with the prognosis in COVID-19 patients	Eligible studies should be written in English, and describe the relationship between age, gender, comorbidities and the prognosis of adult COVID-19 patients. The number of enrolled patients is more than ten.	7	PubMed, EMBASE (by Ovidsp), Web of Science and The Cochrane Library	COVID-19 severity, survivors vs non survivors	124			Asia, the minority was from the USA, Italy, Spain and other countries
Mahumud 2020	The main purpose of this study was to examine the overall distribution of chronic comorbidities in coronavirus disease-19 (COVID-19) infected	Eligible studies were included if they 1) were original articles; 2) published between January 2020 and	4	PubMed, Scopus, EBSCOhost (CINAHL, Medline), Web of	Mortality	23 studies (21 reporting on diabetes)	202005	Not reported	Not reported

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	populations and the risk of the underlying burden of disease in terms of the case fatality ratio (CFR).	April 9th, 2020; focused on 3) epidemiological perspective, 4) reported clinical characteristics of the COVID-19 among infected people, and 5) reported the prevalence of chronic comorbid conditions in infected patients.		Science, and the first 20 pages of Google Scholar.					
Mair 2020	The objective of this meta-analysis was to look at the pooled prevalence of symptoms, laboratory tests, and imaging of all COVID-19 infected patients.	Not reported	5	PubMed, EMBASE, and Ovid	Pooled prevalence and hospitalisation	67	8302	Not reported	Predominantly China, but also Europe, Singapore, Australia, India, Iran and Japan.
Mantovani 2020	We have carried out an updated and comprehensive systematic review and meta-analysis of observational studies that have estimated the global prevalence of pre-existing diabetes in patients admitted to hospital with laboratory-confirmed SARS-CoV-2 infection. We also examined whether there is an association between presence of pre-existing diabetes and severity of COVID-19 illness or risk of	(1) observational studies examining the clinical and biochemical characteristics of hospitalized patients with laboratory-confirmed COVID-19; and (2) all studies that reported data on presence of established diabetes among hospitalized patients with	5	PubMed, Scopus and Web of Science	Prevalence, severity, mortality	83	78874	Hospital	Multiple - sixty-two studies were conducted in Asian countries, mostly in China, and 21 studies were conducted in Europe

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	in-hospital mortality amongst infected patients.	COVID-19. Study participants included in the meta-analysis were adult individuals (aged>18 years) of either sex without any restriction in terms of age, race, ethnicity or comorbidities.							
Matsushita 2020	To identify whether cardiovascular disease (CVD) and its traditional risk factors predict severe coronavirus disease 2019 (COVID-19)	Not reported	4	PubMed and Embase	Severe COVID	25	76,638	Not reported	China (21/25)
Mehraeen 2020	The aim of this study was to systematically review the assessment of risk and model the predictors of mortality in COVID-19 patients.	The English-written peer-re-viewed original papers published from January 1, 2020, to June 27, were included.	6	PubMed, Scopus, Embase, Google Scholar, and Web of Science	Mortality	114	310494	Hospital	Not reported
Meng 2020	To conduct a meta-analysis to investigate the relationship between severe COVID-19 and underlying CHD, hypertension and diabetes	Not reported	7	PubMed, Cochrane, Web of Science, WanFang Data and CNKI	the association between diabetes and severe COVID-19 (pooled OR)	32	8170	Not reported	Majority Asia (China, South Korea), also US, Australia, Italy, France, Poland
Mesas 2020	Risk factors for in-hospital mortality in confirmed COVID-19 patients have been summarized in numerous meta-analyses,	(i) participants—100 and more patients with confirmed COVID-19; (ii) design—	7	e MEDLINE (via PubMed), Scopus and	mortality	60	51,225	Not reported	Predominantly china



Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	but it is still unclear whether they vary according to the age, sex and health conditions of the studied populations. This study explored these variables as potential mortality predictors.	observational studies (prospective or retrospective) with primary individual data for each mortality outcome group, i.e., non-survivors and survivors; (iii) exposure variables (iv) outcome—all patients followed up to definitive hospital discharge or COVID-19 mortality.		Web of Science					
Miller 2020	The purpose of this systematic review with meta-analysis was to determine the mortality rate of hospitalized patients with Covid-19 in China and to identify factors that may potentially influence this rate.	Observational studies that reported the mortality rate of hospitalized patients in China with a confirmed diagnosis of Covid-19.	3	Medline, Embase, and the Cochrane Central Register of Controlled Trials, the Directory of Open Access Journals, Google Scholar,	Mortality	16	1832	Hospital	China
Moula 2020	The aim of this meta-analysis is to quantify the risk of mortality in coronavirus disease 2019 (COVID-19) patients. A meta-analysis was conducted analysing the impact of (1) sex, (2) age,	The articles were selected based on the following inclusion criteria: (1) human studies; (2) full articles about COVID-19 disease containing	5	Pubmed	Mortality	26	8497	Not reported	Twenty papers from China, two papers from Italy, two papers from Korea, one from Iran and one from the United States of America.

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	(3) CVD with coronary artery disease (CAD), (4) CAD alone, (5) CVD without CAD, (6) hypertension, (7) cerebrovascular diseases, and (8) diabetes on mortality.	separate data for patients that survived and patients that did not; (3) analyses of fatality cases; (4) studies including at least 10 patients; (5) articles published from December 2019 and (6) articles in English language.							
Mudatsir 2020	To identify the predictors associated with poor clinical outcomes in patients with COVID-19	Ssessed the clinical manifestations and laboratory findings of patients with mild to severe COVID-19; (2) provided adequate data for the calculation of OR and 95% CI.	4	PubMed, Embase, Cochrane, and Web of Science	COVID-19 severity	19	3578	Hospital	China
Nandy 2020	To evaluate the impact of various morbidities on serious events in COVID 19.	We included only human studies and articles with clearly defined clinical outcome measures.	4	PubMed, Cochrane Central Register of Clinical Trials	Mortality, serious events and mortality	16	3994	Not reported	China
Noor 2020	The main aim of this study was to find the prevalence of mortality among hospitalized COVID-19 infected patients and associated risk factors for death.	We included the articles assessing the association between age, gender, comorbidities and mortality risk factors from COVID-	8	PubMed, Science Direct and Google Scholar	Mortality	58	122,191	Not reported	26 studies were conducted in China, 8 in USA, 7 in Italy, 4 in Spain, 2 in South Korea, 2 in Mexico, in Bangladesh, 1 in Brazil , 1 in England, 1 in Greece, 1 in

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		19 infection as the major outcomes of interest. Articles that reported SARS-CoV-2 infected patients confirmed by real time reverse transcriptase polymerase chain reaction (RT-PCR) were included.							Iran, 1 in Kuwait, 1 in Switzerland, 1 in Turkey, and 1 in few European countries.
Pal 2020	The aim of the study was to provide a comprehensive systematic literature review of DKA and combined DKA/HHS in patients with confirmed COVID-19 in order to analyse the demographic and biochemical parameters and the clinical outcomes.	To identify studies reporting COVID-19 patients with DKA and combined DKA/HHS - no further details.	8	PubMed, Scopus, Embase, and Google Scholar	Mortality	19	110 patients 91 (83%) patients had DKA alone while 19 (17%) patients had combined DKA/HHS	Hospital	Not reported
Palaiodimos 2020	The aim of this study was to systematically review and conduct a meta-analysis of the available observational studies reporting the effect of diabetes on mortality among hospitalized patients with COVID-19.	The pre-specified inclusion criteria were as follows: (i) studies which included adult patients hospitalized for COVID-19 and (ii) studies that provided data on any kind of association between diabetes and mortality in the aforementioned population.	5	Medline, Embase, Google Scholar, and medRxiv	mortality	14	18506, 3713 diabetics, 14793 non-diabetics	Hospital	Multiple - 5 USA, 2 UK, 1 Spain, 1 Italy, 2 Iran, 3 China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Parohan 2020	We aimed to systematically review the present evidence on the association between age, gender, hypertension, diabetes, chronic obstructive pulmonary disease (COPD), cardiovascular diseases (CVDs) and risk of death from COVID-19 infection, and to summarize the available findings in a meta-analysis	(1) all studies assessing the association between age, gender, comorbidities and mortality risk from COVID-19 infection as the major outcomes of interest; (2) observational studies with retrospective design; (3) those that reported hazard ratios (HRs), odds ratios (ORs) or relative risks (RRs) along with 95% confidence intervals (CIs) for the relationship between risk factors and COVID-19 mortality	5	Web of Science, PubMed, Scopus, Cochrane Library and Google scholar	Associations between age, gender, comorbidities and risk of death from COVID-19	14	29,909	Not reported	China (12 studies), Italy (1), Iran (1)
Parveen 2020	The aim of the meta-analysis was to assess the association of diabetes and hypertension with severity of disease.	The studies describing the prevalence of diabetes and hypertension according to disease severity were included.	3	PubMed, Medline and Cochrane, Google Scholar	ICU care, severity (defined as having respiratory distress, RR>30 beats/minute in a resting state, a mean oxygen saturation of <93%, and an arterial blood oxygen partial	7	2018	Not reported	Not reported

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
					pressure (PaO <sub>2</sub> )/oxygen concentration (FiO <sub>2</sub> )<300 mmHg), mortality				
Patel 2020 (1)	We aimed to evaluate epidemiological characteristics, needs of resources, outcomes, and global burden of the disease	Original observational studies that described any details on epidemiological characteristics on patients with COVID-19	3	PubMed	Prevalence of diabetes as a co-morbidity in COVID patients	21	2747	Not stated	China, Singapore, Europe, Australia, USA
Patel 2020 (2)	The objective of this study was to evaluate the risk factors including comorbidities, and complications associated with the poor outcomes amongst COVID-19 patients	All studies describing epidemiology of COVID-19 were included.	5	PubMed, Web of Science, Scopus, and medRxiv	Risk factors associated with poor outcomes: Prevalence, coexisting comorbidities, complications. Meta-regression on invasive mechanical ventilation (IMV) utilisation and mortality	29	12,258	Hospitalized patients	China mostly, also includes Singapore, Europe (1 study), Australia, USA (5)
Pinedo-Torres 2020	We aimed to determine the pooled prevalence of DM and its associated unfavourable health outcomes in patients with acute respiratory syndromes for coronavirus disease according to virus type.	The inclusion criteria were: (1) available data of more than 10 patients; (2) adult patients; (3) number of participants with confirmed diagnosis of DM type I or II; and (4)	4	PubMed/Medline, Scopus, Web of Science, Cochrane, and Scielo	Prevalence, ICU admission, death	15 studies reporting on SARS-Cov-2	3758	Not reported	13/15 studies from China, 1 Italy, 1 Singapore

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		confirmed diagnosis of coronavirus infection.							
Pinto 2020	We aimed to investigate the magnitude of this risk (of diabetes on disease severity) and its dependency on age.	We performed a systematic search and meta-analysis for clinical reports of COVID-19 infection which included detailed descriptions of patients' clinical profile – specifically, reporting information about the presence of diabetes at admission.	Not reported	Not reported	Severity - ICU admission, O2 sat<90%	7	1592	Hospital	China
Plasencia-Urizarri 2020	To evaluate the risk of severe clinical presentation of COVID-19 in patients with comorbidities.	Not reported	3	PubMed, EBSCO, Clinicalkey, Scopus, Embase and HighWire	Severe vs Non-severe patients	13	99817	Not reported	Not reported
Qui 2020	The current meta-analysis aimed to find risk factors for the COVID-19-related death, helping to enhance the efficacy and reduce the mortality of COVID-1	1) The cases in each study were patient diagnosed with COVID-19; 2) Involving the death group or non-survivor group and the survivor group; 3) At least one outcome reported among demographical characteristics,	4	PubMed, Embase, medRxiv and Cochrane Library	The pooled prevalence of diabetes in COVID-19 death patients	15	2401	Not reported	China, Korea

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		comorbidities and clinical manifestations of COVID-19 deceased							
Radwan 2020	To determine the association between comorbidities and the severity of the disease among COVID-19 patients.	The inclusion criteria comprised hospitalized patients diagnosed with COVID-19 according to WHO guidance (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2] detection in respiratory specimens by next-generation sequencing or real-time reverse transcription-polymerase chain reaction [RT-PCR] methods).	Not reported	Cochrane, Medline, Trip, and EMBASE databases	severity of COVID-19-related illness namely, intensive care unit (ICU) admission, mechanical ventilation and death. COVID-19 severity was defined based on the criteria of China's National Health Commission as mild, moderate, severe, and critical	7	1885	Hospital	China
Rod 2020	Therefore, we compiled a brief summary of the literature evaluating the risk factors for covid-19 disease severity with a two-fold purpose: (i) to provide healthcare and public health professionals with a reference list of the	Do not list inclusion criteria. They state "Articles were selected for the review if they included a comparison between non-severe and CSF	Not reported	PubMed, Scopus and MedRxiv	Not reported	Not reported	Not reported	Not reported	Not reported

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	consistency of risk factors for covid-19 severity, and (ii) to inform researchers about the consistency of reporting in the available literature.	cases according to the categorization of severity in each article." CSF = composite outcome of disease severity-fatality							
Roncon 2020	To assess the risk of ICU admission and mortality risk in diabetic COVID-19 patients.	Not reported	3	MEDLINE, Scopus and Web of Science.	ICU admission, deaths	8	1382	Not reported	Not reported
Sacks 2020	(1) To characterise the outcomes of COVID-19 for people with diabetes and (2) add value to current recommendations for healthcare providers and people with diabetes to encourage optimal management.	Recommendations were summarised in addition to expert guidance based on the following topic areas: diabetes specific, general prevention and logistical considerations.	Not reported	We undertook a search of PubMed, MEDLINE, EMBASE, Google Scholar	incidence of diabetes in covid; severity of infection in PWD, mortality in PWD; effect of diabetes control on covid-19 disease outcome; consequences of Covid-19 for PWD	Not reported	Not reported	Not reported	China, Australia
Sales-Peres 2020	This systematic review asked the following questions: (i) "Is obesity associated with higher levels of COVID-19 incidence, prevalence, and risk factors?"; and (ii) "Is obesity associated with higher levels of severe medical complications and does it lead to critical illness and ICU admission?".	Our eligibility criteria included case reports, case series, clinical trials, and randomized controlled trials published in English, Portuguese, and Spanish in peer-reviewed journals. The studies must that have addressed epidemiological and clinical features of	5	MEDLINE, EMBASE, Web of Science, BVS/LILACS, SCI-ELO, SCOPUS, and Google Scholar	Severity - composite outcome (severe COVID infection, ICU admission, mechanical ventilation, mortality)	9	6577	Not reported	3 USA, 2 China, 2 France, 1 Spain, 1 Italy



Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		COVID-19 and its association with obesity.							
Sanyaolu 2020	To review these comorbidities, given that most patients with severe COVID-19 cases had comorbidity. Furthermore, we would like to examine specific comorbidities in relation to the COVID-19 disease progression and outcomes based on the literature report since the outbreak	An article was selected if it included keywords such as coronavirus, COVID-19, SARS-CoV-2, clinical features, comorbidity, diabetes, and hypertension. Articles were then reviewed and included based on the applicability to the topic	4	PubMed, Google Scholar, EBS COhost, Mendeley and Medline Plus	Reporting from other meta-analysis: Prevalence of Diabetes in COVID-19 patients	Not reported	Not reported	Not reported	Not reported
Sathish 2020	We performed a systematic review and meta- analysis to examine the proportion of newly diagnosed diabetes in COVID-19 patients.	Observational studies providing data on the number or proportion of COVID-19 patients (laboratory-confirmed or clinically diagnosed) with newly diagnosed diabetes	7	PubMed, MEDLINE, Embase, and Scopus databases and preprint servers (medRxiv and Research Square)	Pooled proportion of covid-19 patients with newly diagnosed diabetes	8	3711	Hospital	China, USA, Italy
Sayed 2020	In this review, the possible polymorphisms involved in susceptibility or resistance towards viral entry along with rise of telemedicine are investigated	Not reported	8	Pubmed, EMBASE	Mortality and morbidity among COVID-19 patients with existing diabetes; deaths in patient with T1D; t1D and deprivation	Not reported	Not reported	Not reported	China, Europe, USA, Israel, England,

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Sepandi 2020	We investigated the possible risk factors of death in patients with COVID-19, and determined the features that may predict mortality.	All articles published in the period Jan 1, 2020, to Mar 23, 2020, written in English and reporting factors associated with COVID-19 mortality were reviewed. Cohort, case-control, or cross-sectional studies were included.	3	Med-line/PubMed, Scopus, and Google scholar.	Mortality	13 studies (9 reporting on diabetes)	Not reported	Not reported	China
Shang 2020	In this study, we aimed to assess whether diabetes mellitus (DM) would increase the risk of severe infection and death in patients with COVID-19.	Only those research articles that reported data of DM and at least one outcome of interest were included in this meta-analysis. The primary outcomes were the pooled severe infection and mortality risk in COVID-19 patients with DM.	7	PubMed, Web of Science, MedRxiv and COVID-19 academic research communication platform	Severity, mortality	76	31067	Hospital	Majority from China
Shoar 2020	Since the emergence of the coronavirus disease 19 (COVID-19), a number of studies have reported the presence of cardiovascular diseases in affected patients and linked them with a higher risk of mortality.	Original studies in adult patients with COVID-19 comparing the demographics, clinical characteristics, radiologic findings, or laboratory	Not reported	PubMed	survivor vs non-survivor	12	3257	Not reported	Wuhan, China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	We conducted an online search in Medline/PubMed to identify original cohorts comparing data between survivors and non-survivors from COVID-19.	parameters between survivors and non-survivors were eligible for inclusion if available in English language full-text. Eligible articles were included into meta-analysis if data on variables of interest were extractable in crude numbers for both the survivor and non-survivor groups.							
Singh 2020 (1)	We aimed to evaluate the outcome in hypertensive patients with COVID-19 and its relation to the use of renin-angiotensin system blockers (RASB)	We have retrieved all the available literature published in English language on COVID-19, that reported the outcomes in different co-morbidities	3	PubMed	Prevalence of diabetes in COVID-19 patients	Not reported	Not reported	Not reported	Not reported
Singh 2020 (2)	This review aims to estimate the prevalence of both cardiometabolic and other co-morbidities in patients with COVID-19 infection, and to estimate the increased risk of severity and mortality in people with co-morbidities.	We retrieved all studies conducted in patients with COVID-19 that explicitly reported the detailed epidemiological characteristics, prevalence of comorbidities, severity of the	4	Medline, Scopus and the World Health Organisation website	COVID-19 severity, In-hospital mortality	18	14558	17 studies were based on in-patients, whilst one study used data from infectious diseases registries	16 were based in China, 1 was from the USA, and 1 was from Italy

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		disease, and in-hospital death outcomes							
Singh 2020 (3)	This review aims to collate currently available data about diabetes and COVID-19 infection. It specifically looks at the relation between diabetes and COVID-19 in terms of epidemiology, pathophysiology and therapeutics.	Not reported	4	PubMed database and Google Scholar	Association of diabetes in COVID-19 patients, morbidity and mortality	Not reported	Not reported	Not reported	Not reported
Ssentongo 2020	We took a comprehensive approach and estimated the association of major pre-existing chronic conditions, including cardiovascular diseases, hypertension, diabetes, congestive heart failure, cerebrovascular disease, chronic kidney disease, chronic liver disease, cancer, chronic obstructive pulmonary disease, asthma, and HIV/AIDS, and the risk of mortality from COVID-19.	1. studies involving patients hospitalized for COVID-19, regardless of age. 2.Exposure: any of the 11 comorbidities 3.Comparison: Hospitalized patients with COVID-19 without the above mentioned pre-existing comorbidities 4. The primary outcome was the mortality in hospitalized patients with COVID-19 5. randomized	7	PubMed (MEDLINE), OVID (MEDLINE, HEALTHSTAR), SCOPUS, Joana Briggs International EBP, Cochrane Library databases, Google Scholar and Medrxiv.	Mortality	25 studies	65484	Hospital	21/25 from China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		controlled trials, cohort, and case-control studies.							
Tadic 2020	The aim of this review article was to summarize the current knowledge about the relationship between diabetes and COVID-19 and its role in outcome in these patients.	Not reported	4	PubMed, Scopus, Web of Science, Google Scholar	narrative report of prevalence and mortality of people with DM in covid19 patients,	Not reported	Not reported	Not reported	China
Tan 2020	The objective of this systematic review and meta-analysis was to provide a contemporary and global assessment of the point estimate of death and risk factors for severe disease in patients admitted to an ICU with COVID-19	(1) Design that included randomized controlled trials, non-randomized controlled trials(case control or controlled cohort), observational studies and case series, (2) Study population that included adult patients(\$18 years old) admitted to a n ICU or high dependency unit, which included studies that compared ICU and non-ICU cohorts (3) Disease that confirmed COVID-19 or SARS-CoV-2 (4)	8	Medline, Embase and Cochrane Library	Prevalence of diabetes in severe COVID-19 patients (i.e. those that were admitted to HDU/ICU)	35 reference d diabetes mellitus)	3345	Hospital (ICU/HDU)	Kuwait, Israel, USA, Spain, Portugal, China, Italy, Greece, France, England, Oman, Netherlands, Switzerland, Canada, Denmark and United Kingdom

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		Outcome that reported in-hospital mortality rates.							
Tian 2020	To conduct a systematic meta-analysis of published articles to comprehensively elucidate predictors of mortality in hospitalized COVID-19 patients	NOT STATED EXPLICITLY ("eligibility criteria" mentioned but not detailed). Studies looking at clinical predictors of mortality in hospitalised COVID-19 patients, with death from COVID-19 as a clear outcome	4	PubMed, Google scholar, Web of Science, and China National Knowledge Infrastructure (CNKI)	Prevalence of diabetes between mortality vs survival group, associations between mortality from COVID-19 and diabetes i.e. mortality in diabetes vs non-diabetes	14, 12 used for DM	In total, 4659 patients. 4315 used for DM. 3212 survived of which 682(21.2%) had DM.	Hospitals	China
Varikasuvu 2020	We aim to evaluate the risk of disease severity and mortality in association with diabetes in COVID-19 patients.	Studies reporting diabetic proportions in sub-groups of COVID-19 patients (Severe vs. Non-severe & Mortal vs. Survival) were included.	5	Pubmed, Cochrane, medRxiv, "other databases"	Severity and mortality	47	The diabetic proportions were 1009/3773 and 1360/9495 in severe/mortal and non-severe/survival groups of COVID-19 cases, respectively.	Not reported	Majority China; also Italy, France, USA,
Venkata 2020	Not reported	Not reported	Not reported	PubMed, Embase, and Google Scholar	Prevalence	22 studies	>11,000	Hospital	8 countries
Wang 2020 (1)	We performed a systematic review and meta-analysis in order to identify risk factors	(1) The study was a clinical observation in humans; (2) the	4	PubMed, Embase, Web of	Clinical characteristics associated with	34, 31 used for DM	A total of 6,263 COVID-19 cases,	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	associated with the severity and mortality rate among COVID-19 patients.	study included COVID-19 patient information; and (3) the study included information regarding comorbidity and/or organ injury.		Science, medRxiv, and bioRxiv	increased disease severity and mortality among patients with COVID-19 The effect of various preexisting chronic diseases on the risk of developing severe COVID-19 The association between preexisting diabetes and COVID-19 severity i.e. diabetics vs non-diabetics.	(counted from figure 6)	including 1,727 and 4,536 severe and nonsevere patients, respectively. For DM, see figure 6 - if total the number of 'cases', comes to 6104.		
Wang 2020 (2)	We performed a meta-analysis of the available studies to explore relationship between comorbidity and patients with COVID-19.	(1) Types of Studies: published studies reported the relationship between comorbidity and patients with COVID-19; (2) Subjects: diagnosed patients with COVID-19; (3) Exposure intervention: COVID-19 patients with comorbidity included: hypertension, diabetes, chronic	3	PubMed (Medline), EMBASE, Springer, Web of Science, and Cochrane Library databases	Association between diabetes in COVID patients and severe disease (severity sub-grouped into ICU admission and clinical symptoms). Diabetes vs non-diabetics.	6, 6 used for DM. 2 studies used whether patients experienced ICU care to judge the severity of the disease, and the other 4 studies used clinical	For DM, 324 severe group cases and 1234 non-severe group cases (1558 in total)	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		obstructive pulmonary disease (COPD), liver disease, malignancy, renal disease, cardiovascular disease, cerebrovascular disease; (4) Outcome indicator: the odds ratios (OR) with 95% confidence intervals (CI) for each comorbidity.				symptoms to judge the severity of the disease.			
Wang 2020 (3)	The aim of this research was to systematically assess the prevalence of diabetes mellitus among 2019-nCoV.	The inclusion criteria were as follows: (1) the studies were published in English; (2) 2019-nCoV diagnosed depending on World Health Organization interim guidance; (3) those were clinical studies; (4) clinical information can be collected from the articles.	2	PubMed, Embase, Web of Science, and Medline	Prevalence of diabetes overall and in moderate and severe COVID patients	9	2007	Not reported	China
Wicaksana 2020	This article aims to review the current evidence on diabetes management and specific considerations during the COVID-19	We conducted a scoping review in PubMed, Science Direct, DOAJ and Microsoft	4	PubMed, Science Direct, DOAJ and Microsoft	ICU admission, mortality	7	Not reported	Not reported	Not reported



Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	pandemic for people living with diabetes.	Academics databases from January 1 to April 17, 2020. Searching terms included“COVID-19”, “severe acute respiratory syndrome coronavirus 2”, and “Diabetes Mellitus” were used. Only scientific articles discussing diabetes management and specific considerations were selected and extracted.		Academics databases					
Wu 2020	This meta-analysis first aims to explore the possible clinical mortality between diabetes and COVID-19, analyse if diabetes patients infected with SARS-CoV-2 are exposed to the worst clinical prognostic risk, and to evaluate the reliability of the evidence.	Primitive studies were carefully examined, and there were no nation restrictions in our study. The inclusion criteria were as follows: (1) all studies reporting data on COVID-19 non-survivors, survivors, and laboratory-confirmed COVID-19 patients; (2) studies limited to mankind, contained	4	Medline via PubMed, EMBASE, and Web of Science	Mortality	9 studies	1471	Hospital	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		original data, published in English and appeared in the form of either abstract or full-text.							
Xu 2020	To systematically review evidence for the risk factors of COVID-19 patients progressing to critical illness.	(i) Prospective or retrospective original reports; (ii) All of the patients were diagnosed with COVID-19; (iii) Characteristics of severe and mild cases were documented; and (iv) Complete medical records were available for data extraction.	3	Chinese and English electronic bibliographic databases, including China National Knowledge Infrastructure (CNKI), Wanfang Database, Weipu Database, Chinese Bio medicine Literature Database (CBM-SinoMed), PubMed, Embase, Cochrane Central Register and Web of Science	Not explicit, but association between diabetes in COVID patients and diseases severity, grouped into severe and non-severe disease.	20, 10 used for DM	1083 for diabetes	Not reported	China
Yanai 2020	I systematically reviewed a possible association of metabolic syndrome with the susceptibility to severe	Not reported	Not reported	Not reported	Severity (undefined)	12 studies	Not reported	Not reported	Not reported

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and severity of COVID-19 by literature search.								
Yang 2020	We will provide a systematic evaluation and detail, which will not only estimate the prevalence of comorbidities in all patients, but also assess the risk of underlying diseases in severe patients compared to non-severe patients.	Eligible were those that described the epidemiological, clinical features of COVID-19, and the prevalence of chronic diseases in infected patients".	2	PubMed, EMBASE, and Web of Science databases	The association between presence of diabetes and severe and non-severe diseaseAlso, prevalence of diabetes in COVID-19 patients.	7 in total. Between severe group and non-severe group for DM used 4.	1576 participants in total, of which 9.7% had diabetes in the pooled analysis.	Hospitals	China
Yifan 2020	We have systematically reviewed the single-centre or multicentre observational studies of older patients with COVID-19 and comprehensively dissected the true impact of age as a complex variable on COVID-19 disease.	Eligibility criteria are as follows: (a) research types: descriptive studies including case-control studies, retrospective cross-sectional studies, cohort studies, and case series; (b) research subjects: patients with laboratory-confirmed COVID-19; (c) studies comparing clinical characteristics, laboratory findings, and outcomes for the elderly and young.	8	PubMed, EMBASE, Cochrane Library, Scopus, and Web of Science databases	Association between diabetes in COVID patients and age (adult vs elderly). Diabetes vs non-diabetes.	4	2047 patients confirmed with COVID-19. 195 had diabetes	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
Zaki 2020	To undertake a review and critical appraisal of published/preprint reports that offer methods of determining the effects of hypertension, diabetes, stroke, cancer, kidney issues, and high-cholesterol on COVID-19 disease severity.	Not reported	Not reported	COVID-19 Open Research Dataset (CORD-19), PubMed, Google Scholar	Prevalence, mortality	11 on diabetes	Not reported	Hospital	Majority from China
Zhao 2020 (1)	The aim of our study is to perform a systematic review and meta-analysis of clinical characteristics to explore the risk factors of COVID-19-associated severe illness and death, and first time to compare the differences of those predictors between COVID-19, SARS and MERS.	Inclusion criteria were as follows: (1) any study that gives information about the clinical characteristics or demographic or outcome of the infectious disease, (2) restriction language to English only, and (3) studies that allowed us to stratify the risk of severe or fatal COVID-19 by demographic or medical condition were preferred.	2	PubMed, Embase, Cochrane, the Web of Science Core Collection (Clarivate Analytics), and MedRxiv databases	Severity, mortality	30 studies overall (10 relevant for diabetes)	53,000 (2511 relevant for diabetes)	Not reported	Majority from China
Zhao 2020 (2)	This study aimed to compare the epidemiological and clinical features between ICU patients and non-ICU patients in order to find the risk factors for exacerbation prediction of Novel	(i) patients were diagnosed with NCIP; (ii) study design was the cohort study comparing ICU patients with non-ICU patients.	2	PubMed, Embase and Google scholar	Association between diabetes in COVID patients and ICU admission. Diabetes vs non-diabetes.	2 studies	179	1 from a single centre, 1 from a hospital	Wuhan, China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
	Coronavirus Infected Pneumonia (NICP) patients, which was very valuable to identify the development, treatment and prognosis of NCIP patients.								
Zheng 2020	In this article, we analysed the clinical characteristics of COVID-19 patients with critical/mortal illness and non-critical illness in 13 literatures with 3027 patients, to identify the risk factors for COVID-19 patients to develop critical disease or death, in order to effectively predict the progression of the disease, make early treatment response and allocate medical resources in a better way.	(1) groups involving critical illness or death and non-critical illness; (2) patients should be confirmed to have been infected by 2019 novel coronavirus; (3) study designs included randomized controlled trials, nonrandomized controlled trials, case-control studies, cohort studies, cross-sectional studies, and also case reports; (4) at least one outcome reported among demographical characteristics, comorbidities, clinical manifestations or laboratory examinations; (5)	3	Pubmed, Embase, Web of Science, and CNKI	Association between diabetes in COVID patients and critical/mortal patients	13 studies, 11 for DM	A total number of 3027 patients. Of those with diabetes - 460 critical/mortal , 2119 non-critical	Not reported	China

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		study sample was larger than 20.							
Zhou 2020 (1)	We conducted this meta-analysis to provide a comprehensive understanding of the characteristics of COVID-19-related deaths and compare them with those of survivors to enable better investigations of the prognostic factors of COVID-19 in infected individuals.	(1) patients should be confirmed to have been infected with SARS-CoV-2; (2) each study should consist of a death group; (3) the full text of each article should be available; and (4) at least one outcome was reported among demographical characteristics, comorbidities, clinical characteristics, laboratory examinations, or image examinations	8	PubMed, EMBASE, CNKI	Association between diabetes in COVID patients and mortality. Diabetes vs non-diabetes.	19, of which 18 were included in the diabetes pooling - 6 China, 12 other.	Not reported	Not reported	Asia, Europe, America
Zhou 2020 (2)	The aim of this study was to integrate recent advances and present an updated meta-analysis of the relationships between comorbidities and severe or fatal outcomes associated with COVID-19.	(1) published studies reporting the relationship between comorbidities and patients with COVID-19 written in English; and (2) the inclusion of data on the prevalence of comorbidities in COVID-19 patients who had severe manifestations, or	4	PubMed, Embase, and Cochrane Library databases	The primary outcome measure was to evaluate the overall prevalence of comorbidities in severe or fatal COVID-19, disease severity (severe disease based on clinical symptoms, ICU admission, and death)	34. 25 used for diabetes, 17 with clinical symptoms as outcome, 4 with ICU admission and 4 with death	16110	Not reported	China, the USA, the UK, Italy, France, Spain, Australia, Singapore, and Korea

Study ID	Review objective as stated by authors	Inclusion criteria as stated by authors	Search month (2020)	Databases searched	Outcomes reported	# included studies	# participants	Setting(s)	Country(s)
		were admitted to an ICU, or died							

Supplemental Table 3. Summary of AMSTAR-2 judgements by domain<sup>11</sup>

Domain	No	Partial yes	Yes
Protocol registered in advance (item 2)	85	5	21
Adequacy of search (item 4)	13	53	46
Justification for excluding individual studies (item 7)	81	11	20
Risk of bias from individual studies being included in the review (item 9)	53	1	58
Appropriateness of meta-analytical methods (item 11) (Note, 26 did not conduct meta-analysis)	8	20	59
Consideration of risk of bias when interpreting the results of the review (item 13)	73	12	27
Assessment of presence and likely impact of publication bias (item 15)	57	3	52



Supplemental Table 4. AMSTAR-2 critical domain judgements for included reviews

Study ID	Protocol registered before commencement of the review (item 2)	Adequacy of the literature search (item 4)	Justification for excluding individual studies (item 7)	Risk of bias from individual studies being included in the review (item 9)	Appropriateness of meta-analytical methods (item 11)	Consideration of risk of bias when interpreting the results of the review (item 13)	Assessment of presence and likely impact of publication bias (item 15)	Total yes/ partial yes
Abdi 2020	Yes	Yes	No	No	Partial yes	No	Yes	4
Aggarwal 2020	No	Partial yes	No	No	Partial yes	No	No	2
Apicella 2020	No	Yes	No	No	n/a	No	No	1
Awortwe 2020	No	Partial yes	No	No	Partial yes	No	Yes	3
Bajgain 2020	No	Partial yes	No	Yes	No	No	No	2
Baradaran 2020	No	Partial yes	No	No	Partial yes	No	No	2
Barrera 2020	Yes	Yes	No	Yes	Yes	Yes	No	5
Bennett 2020	No	Partial yes	No	Yes	No	No	No	2
Boddu 2020	No	Partial yes	No	No	n/a	No	No	1
Chen 2020	No	Yes	No	Yes	Yes	No	No	3
Chidambaram 2020	no	Partial yes	No	Yes	no	No	yes	3
Chowdhury 2020	No	No	No	No	n/a	No	No	0
Costa 2020	no	Partial yes	No	No	n/a	No	No	1
d'Annunzio 2020	No	Partial yes	No	No	n/a	No	No	1
de Almeida-Pititto 2020	Yes	Yes	No	No	Yes	No	Yes	4
Del Sole 2020	No	Yes	No	No	Yes	No	No	2
Deravi 2020	no	Yes	Partial yes	No	n/a	No	No	2
Desai 2020	no	Partial yes	No	No	Partial yes	No	No	2

Study ID	Protocol registered before commencement of the review (item 2)	Adequacy of the literature search (item 4)	Justification for excluding individual studies (item 7)	Risk of bias from individual studies being included in the review (item 9)	Appropriateness of meta-analytical methods (item 11)	Consideration of risk of bias when interpreting the results of the review (item 13)	Assessment of presence and likely impact of publication bias (item 15)	Total yes/ partial yes
Deshmukh 2020	no	Partial yes	No	No	n/a	No	No	1
Du 2020	No	Yes	No	Yes	Yes	Yes	Yes	5
Emami 2020	No	Yes	No	Yes	Yes	No	Yes	4
Espinosa 2020	yes	Yes	yes	Yes	Yes	Yes	Yes	7
Fadini 2020	No	No	No	No	Yes	No	No	1
Faghir-Gangi 2020	No	Partial yes	No	Yes	Yes	No	Yes	4
Fang 2020	Yes	Partial yes	Yes	No	Partial yes	Yes	Yes	6
Figliozi 2020	Yes	Partial yes	No	Yes	Yes	Yes	Yes	6
Flaherty 2020	No	No	No	No	n/a	No	No	0
Gallo Marin 2020	No	No	No	No	n/a	No	No	0
Gold 2020	no	Partial yes	No	No	Partial yes	No	No	2
Guler 2020	No	Partial yes	No	No	n/a	No	No	1
Guo 2020	No	Yes	No	No	Yes	No	Yes	3
Hariyanto 2020	No	Partial yes	No	No	Yes	No	No	2
Hartmann-Boyce 2020	No	No	No	No	n/a	Partial yes	No	1
Hu 2020	No	Yes	No	Yes	Yes	No	Yes	4
Huang 2020	No	Partial yes	No	No	Yes	No	Yes	3
Hussain 2020	No	Yes	No	No	n/a	No	No	1
Hussain 2020	No	Yes	No	Yes	Yes	No	No	3

Study ID	Protocol registered before commencement of the review (item 2)	Adequacy of the literature search (item 4)	Justification for excluding individual studies (item 7)	Risk of bias from individual studies being included in the review (item 9)	Appropriateness of meta-analytical methods (item 11)	Consideration of risk of bias when interpreting the results of the review (item 13)	Assessment of presence and likely impact of publication bias (item 15)	Total yes/ partial yes
Izcovich 2020	yes	Yes	yes	Yes	Yes	Yes	Yes	7
Javanmardi 2020	no	Partial yes	yes	Yes	Yes	No	Yes	5
Kaur 2020	No	No	No	No	No	No	No	0
Khan 2020	no	Yes	yes	Yes	Partial yes	No	Yes	5
Khateri 2020	no	Yes	Partial yes	Yes	Yes	Yes	yes	6
Kow 2020	No	Partial yes	Yes	No	Yes	Partial yes	No	4
Kumar 2020 (1)	Yes	Partial yes	No	Yes	Yes	Partial yes	Yes	6
Kumar 2020 (2)	Yes	No	Yes	No	Yes	No	No	3
Lee 2020	Yes	Partial yes	No	No	Yes	No	No	3
Li 2020 (1)	Partial Yes	Partial yes	No	Yes	No	Yes	Yes	5
Li 2020 (2)	Partial Yes	Partial yes	No	Partial Yes	Yes	Yes	No	5
Li 2020 (3)	no	Yes	yes	Yes	Yes	No	No	4
Li 2020 (4)	no	Partial yes	yes	Yes	No	No	No	3
Liu 2020 (1)	no	Yes	yes	Yes	Yes	No	Yes	5
Liu 2020 (2)	No	Partial yes	No	Yes	Yes	Yes	Yes	5
Lu 2020	Yes	Partial yes	yes	Yes	n/a	No	Partial yes	5
Lukito 2020	No	Yes	No	Yes	Yes	Yes	Yes	5
Luo 2020	no	Partial yes	yes	Yes	Yes	Yes	Yes	6
Mahumud 2020	No	Yes	No	Yes	Yes	No	Yes	4
Mair 2020	no	Yes	No	Yes	Yes	Yes	No	4

Study ID	Protocol registered before commencement of the review (item 2)	Adequacy of the literature search (item 4)	Justification for excluding individual studies (item 7)	Risk of bias from individual studies being included in the review (item 9)	Appropriateness of meta-analytical methods (item 11)	Consideration of risk of bias when interpreting the results of the review (item 13)	Assessment of presence and likely impact of publication bias (item 15)	Total yes/ partial yes
Mantovani 2020	No	Yes	No	Yes	Yes	Partial yes	Yes	5
Matsushita 2020	yes	Yes	No	Yes	Yes	No	yes	5
Mehraeen 2020	No	Partial yes	No	Yes	n/a	No	No	2
Meng 2020	no	Yes	Partial yes	Yes	Yes	Partial yes	Yes	6
Mesas 2020	yes	Partial yes	yes	Yes	Yes	Yes	yes	7
Miller 2020	Yes	Yes	No	No	Yes	No	Yes	4
Moula 2020	No	Partial yes	No	Yes	Yes	Yes	yes	5
Mudatsir 2020	no	Partial yes	yes	Yes	Yes	Yes	Yes	6
Nandy 2020	No	Partial yes	No	Yes	No	No	No	2
Noor 2020	no	Partial yes	No	Yes	Yes	No	yes	4
Pal 2020	No	Partial yes	No	No	n/a	No	No	1
Palaiodimos 2020	No	Yes	No	Yes	Yes	No	Yes	4
Parohan 2020	No	Yes	No	Yes	Yes	No	Yes	4
Parveen 2020	No	Yes	No	Yes	Yes	No	No	3
Patel 2020 (1)	Partial Yes	No	No	No	n/a	No	No	1
Patel 2020 (2)	No	Yes	No	Yes	Yes	Yes	No	4
Pinedo-Torres 2020	Yes	Yes	No	Yes	Yes	Partial yes	Yes	6
Pinto 2020	No	No	No	No	Yes	No	No	1
Plasencia-Urizarri 2020	No	Yes	yes	Yes	Yes	Yes	Yes	6

Study ID	Protocol registered before commencement of the review (item 2)	Adequacy of the literature search (item 4)	Justification for excluding individual studies (item 7)	Risk of bias from individual studies being included in the review (item 9)	Appropriateness of meta-analytical methods (item 11)	Consideration of risk of bias when interpreting the results of the review (item 13)	Assessment of presence and likely impact of publication bias (item 15)	Total yes/ partial yes
Qui 2020	Partial Yes	Partial yes	No	No	Yes	Yes	Yes	5
Radwan 2020	no	Partial yes	yes	Yes	Yes	Yes	No	5
Rod 2020	No	No	No	No	Partial yes	No	No	1
Roncon 2020	No	Yes	No	Yes	Yes	Partial yes	Yes	5
Sacks 2020	no	Yes	No	No	n/a	Partial yes	No	2
Sales-Peres 2020	Yes	Yes	No	Yes	Yes	No	Yes	5
Sanyaolu 2020	No	Partial yes	No	No	n/a	No	No	1
Sathish 2020	yes	Yes	Partial yes	Yes	Yes	Yes	Partial yes	7
Sayed 2020	no	Partial yes	No	No	n/a	No	No	1
Sepandi 2020	No	Yes	No	Yes	Yes	Partial yes	Yes	5
Shang 2020	No	Yes	No	Yes	Yes	Yes	Yes	5
Shoar 2020	no	Partial yes	yes	No	Partial yes	No	No	3
Singh 2020 (1)	No	No	No	No	n/a	No	No	0
Singh 2020 (2)	Yes	Partial yes	yes	Yes	Yes	No	Yes	6
Singh 2020 (3)	no	Yes	No	No	n/a	No	No	1
Ssentongo 2020	Yes	Yes	No	Yes	Yes	Yes	Yes	6
Tadic 2020	no	Partial yes	No	No	n/a	No	No	1
Tan 2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7
Tian 2020	No	Partial yes	No	Yes	Partial yes	No	No	3

Study ID	Protocol registered before commencement of the review (item 2)	Adequacy of the literature search (item 4)	Justification for excluding individual studies (item 7)	Risk of bias from individual studies being included in the review (item 9)	Appropriateness of meta-analytical methods (item 11)	Consideration of risk of bias when interpreting the results of the review (item 13)	Assessment of presence and likely impact of publication bias (item 15)	Total yes/ partial yes
Varikasuvu 2020	Yes	Yes	No	Yes	Partial yes	Partial yes	Yes	6
Venkata 2020	No	Partial yes	No	No	Yes	No	No	2
Wang 2020 (1)	No	Yes	Partial yes	No	Partial yes	No	Yes	4
Wang 2020 (2)	No	Partial yes	Partial yes	Yes	Partial yes	Partial yes	Yes	6
Wang 2020 (3)	No	Yes	No	No	Yes	No	Yes	3
Wicaksana 2020	No	Partial yes	No	No	n/a	No	No	1
Wu 2020	No	Yes	No	No	Partial yes	No	No	2
Xu 2020	No	No	Partial yes	Yes	Partial yes	Yes	Yes	5
Yanai 2020	No	No	No	No	n/a	No	No	0
Yang 2020	No	Partial yes	Partial yes	No	Partial yes	No	No	3
Yifan 2020	No	Yes	Partial yes	Yes	Partial yes	No	Partial yes	5
Zaki 2020	No	Partial yes	No	No	n/a	No	No	1
Zhao 2020 (1)	No	Partial yes	No	Yes	Yes	No	Yes	4
Zhao 2020 (2)	No	Partial yes	No	No	No	Yes	No	2
Zheng 2020	No	Partial yes	Partial yes	Yes	Yes	Yes	No	5
Zhou 2020 (1)	No	Partial yes	Yes	No	Partial yes	No	Yes	4
Zhou 2020 (2)	Partial yes	Partial yes	Partial yes	No	Partial yes	Partial yes	Yes	6

## Appendix 1. Search strategies

<b>MEDLINE</b>	
1	exp Coronavirus/
2	exp Coronavirus Infections/
3	(coronavirus* or corona virus* or OC43 or NL63 or 229E or HKU1 or HCoV* or ncov* or covid* or sars-cov* or sarscov* or Sars-coronavirus* or Severe Acute Respiratory Syndrome Coronavirus*).mp.
4	((pneumonia or covid* or coronavirus* or corona virus* or ncov* or 2019-ncov or sars*).mp. or exp pneumonia/) and Wuhan.mp.
5	(2019-ncov or ncov19 or ncov-19 or 2019-novel CoV or sars-cov2 or sars-cov-2 or sarscov2 or sarscov-2 or Sars-coronavirus2 or Sars-coronavirus-2 or SARS-like coronavirus* or coronavirus-19 or covid19 or covid-19 or covid 2019 or ((novel or new or nouveau) adj2 (CoV on nCoV or covid or coronavirus* or corona virus or Pandemi*2)) or ((covid or covid19 or covid-19) and pandemic*2) or (coronavirus* and pneumonia)).mp.
6	COVID-19.rx,px,ox. or severe acute respiratory syndrome coronavirus 2.os.
7	1 or 2 or 3 or 4 or 5 or 6
8	exp Diabetes Mellitus/ or Metabolic Diseases/
9	(diabet* or t2d or t1d or niddm or iddm or metabolic disease).ti,ab,kw.
10	8 or 9
11	7 and 10
12	limit 11 to yr="2019 -Current"
13	limit 11 to ("systematic review" or "reviews (maximizes specificity)")
14	((systematic or evidence) adj3 review) or rapid review or overview).ti.
15	12 and 14
16	13 or 15

<b>EMBASE</b>	
1	exp Coronavirus/
2	exp Coronavirus Infections/
3	(coronavirus* or corona virus* or OC43 or NL63 or 229E or HKU1 or HCoV* or ncov* or covid* or sars-cov* or sarscov* or Sars-coronavirus* or Severe Acute Respiratory Syndrome Coronavirus*).mp.
4	((pneumonia or covid* or coronavirus* or corona virus* or ncov* or 2019-ncov or sars*).mp. or exp pneumonia/) and Wuhan.mp.
5	(2019-ncov or ncov19 or ncov-19 or 2019-novel CoV or sars-cov2 or sars-cov-2 or sarscov2 or sarscov-2 or Sars-coronavirus2 or Sars-coronavirus-2 or SARS-like coronavirus* or coronavirus-19 or covid19 or covid-19 or covid 2019 or ((novel or new or nouveau) adj2 (CoV on nCoV or covid or coronavirus* or corona virus or Pandemi*2)) or ((covid or covid19 or covid-19) and pandemic*2) or (coronavirus* and pneumonia)).mp.
6	1 or 2 or 3 or 4 or 5
7	exp *Diabetes Mellitus/ or Metabolic Disease/
8	(diabet* or t2d or t1d or niddm or iddm or metabolic disease*).ti,ab,kw.

9	7 or 8
10	6 and 9
11	limit 10 to yr="2019 -Current"
12	limit 11 to (meta analysis or "systematic review" or "reviews (maximizes specificity)")

OTHER DATABASES	
Terms	Database
Diabetes AND "systematic Review"	LitCOVID
diabetes AND "rapid review"	LitCOVID
diabetes AND "literature review"	LitCOVID
diabetes AND meta-analysis	LitCOVID
(coronavirus OR COVID-19) AND diabetes - limited to Systematic Reviews and Evidence-based Synopses	TRIP
(covid-19 OR coronavirus) AND diabetes AND ("systematic review" OR "rapid review" OR "literature review" OR meta-analysis)	Google Scholar
48 of 1st 100 results included	

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<sup>11</sup> Assessed as per standard AMSTAR-2 guidance as set out in 4. Shea BJ, Reeves BC, Wells G, Thuku M, Hamel C, Moran J, et al. AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. BMJ. 2017;358:j4008.