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MMAT quality assessment results

Reference	Screening questions	Type of study	MMAT questions and answers
Alharthi 2023[18]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Qualitative	**1.1. Is the qualitative approach appropriate to answer the research question?** *Yes (identifying perceived barriers and facilitators)* **1.2. Are the qualitative data collection methods adequate to address the research question?** *Can't tell (secondary analysis of existing data)* **1.3. Are the findings adequately derived from the data?** *Yes* **1.4. Is the interpretation of results sufficiently substantiated by data?** *Yes* **1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?** *Yes (supported by use of Theoretical Domains Framework)*
Alves 2019[19]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Quantitative non-randomised	**3.1. Are the participants representative of the target population?** *Yes (care home residents)* **3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?** *Yes* **3.3. Are there complete outcome data?** *Can't tell (partial data presented)* **3.4. Are the confounders accounted for in the design and analysis?** *No (uncontrolled before/after study)* **3.5. During the study period, is the intervention administered (or exposure occurred) as intended?** *Can't tell (fidelity not monitored)*
Baqir 2017[20]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Quantitative non-randomised	**3.1. Are the participants representative of the target population?** *Yes (care home residents)* **3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?** *Yes* **3.3. Are there complete outcome data?** *Yes (all specified outcomes reported)* **3.4. Are the confounders accounted for in the design and analysis?** *No (uncontrolled before/after study)* **3.5. During the study period, is the intervention administered (or exposure occurred) as intended?** *Can't tell (interventions not externally validated)*

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Birt 2021[21]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Mixed methods	**5.1. Is there an adequate rationale for using a mixed methods design to address the research question?** *Yes (qualitative and quantitative data relevant to process evaluation)* **5.2. Are the different components of the study effectively integrated to answer the research question**? *Yes (integrated in results and discussion)* **5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?** *Yes (see discussion)* **5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?** *Yes (page 11 column 2)* **5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?** *Yes*
Howard 2014[11]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Quantitative descriptive	**4.1. Is the sampling strategy relevant to address the research question?** *Yes* **4.2. Is the sample representative of the target population?** *Yes (all interventions recorded)* **4.3. Are the measurements appropriate?** *Yes* **4.4. Is the risk of nonresponse bias low?** *Yes (data from intervention arm only)* **4.5. Is the statistical analysis appropriate to answer the research question?** *Yes*
Jeffries 2017[13]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Qualitative	**1.1. Is the qualitative approach appropriate to answer the research question?** *Yes (explored factors perceived to affect adoption and implementation)* **1.2. Are the qualitative data collection methods adequate to address the research question?** *Yes (interviews and focus groups)* **1.3. Are the findings adequately derived from the data?** *Yes (context-mechanism-outcome groups identified)* **1.4. Is the interpretation of results sufficiently substantiated by data?** *Yes* **1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?** *Yes (supported by use of realist analysis)*
Jeffries 2018[12]	**S1. Are there clear research questions?** *Yes*	Qualitative	**1.1. Is the qualitative approach appropriate to answer the research question?** *Yes (explored factors perceived to affect adoption and implementation)*

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	S2. Do the collected data allow to address the research questions? *Yes*		**1.2. Are the qualitative data collection methods adequate to address the research question?** *Yes (interviews)* **1.3. Are the findings adequately derived from the data?** *Yes* **1.4. Is the interpretation of results sufficiently substantiated by data?** *Yes (supported by relevant quotes)* **1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?** *Yes (supported by use of Normalisation Process Theory)*
Lane 2020[22]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Qualitative	**1.1. Is the qualitative approach appropriate to answer the research question?** *Yes (gather opinions about proposed service)* **1.2. Are the qualitative data collection methods adequate to address the research question?** *Yes (focus groups and interviews with different staff groups at different sites)* **1.3. Are the findings adequately derived from the data?** *Yes* **1.4. Is the interpretation of results sufficiently substantiated by data?** *Yes (supported by relevant quotes)* **1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?** *Yes (supported by use of Theoretical Domains Framework)*
Madden 2022[14]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Qualitative	**1.1. Is the qualitative approach appropriate to answer the research question?** *Yes (pharmacists' experience of SMR implementation)* **1.2. Are the qualitative data collection methods adequate to address the research question?** *Yes (interviews with newly employed and established pharmacists)* **1.3. Are the findings adequately derived from the data?** *Yes* **1.4. Is the interpretation of results sufficiently substantiated by data?** *Yes (supported by relevant quotes)* **1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?** *Yes (supported by thematic analysis)*
Peek 2020[15]	**S1. Are there clear research questions?** *Yes*	Quantitative non-randomised	**3.1. Are the participants representative of the target population?** *Yes (general practices and their patients)* **3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?** *Can't tell (for intervention)*

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	S2. Do the collected data allow to address the research questions? *Yes*		3.3. Are there complete outcome data? *Yes* 3.4. Are the confounders accounted for in the design and analysis? *No (small risk of unmeasured confounding)* 3.5. During the study period, is the intervention administered (or exposure occurred) as intended? *Can't tell (interventions not externally validated)*
Rodgers 2022[16]	S1. Are there clear research questions? *Yes* S2. Do the collected data allow to address the research questions? *Yes*	Quantitative non-randomised	3.1. Are the participants representative of the target population? *Yes (general practices and their patients)* 3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)? *Can't tell (for intervention)* 3.3. Are there complete outcome data? *No (6- and 12-month data not collected from all practices)* 3.4. Are the confounders accounted for in the design and analysis? *No (small risk of unmeasured confounding)* 3.5. During the study period, is the intervention administered (or exposure occurred) as intended? *Can't tell (interventions not externally validated)*
Syafhan 2021[17]	S1. Are there clear research questions? *Yes* S2. Do the collected data allow to address the research questions? *Yes*	Quantitative randomised controlled trial	2.1. Is randomisation appropriately performed? *Can't tell (method of randomisation not reported)* 2.2. Are the groups comparable at baseline? *Yes* 2.3. Are there complete outcome data? *No (30% lost to follow-up or withdrew)* 2.4. Are outcome assessors blinded to the intervention provided? *Can't tell (outcome data from GP electronic records)* 2.5 Did the participants adhere to the assigned intervention? *No (30% lost to follow-up or withdrew)*
Thayer 2021[23]	S1. Are there clear research questions? *Yes* S2. Do the collected data allow to address the research questions? *Yes*	Quantitative non-randomised	3.1. Are the participants representative of the target population? *Yes (care home residents with intellectual disabilities)* 3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)? *Yes (details recorded for each review and associated outcomes)* 3.3. Are there complete outcome data? *Yes (all specified outcomes reported)* 3.4. Are the confounders accounted for in the design and analysis? *No (uncontrolled before/after study)*

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			3.5. During the study period, is the intervention administered (or exposure occurred) as intended? *Yes (one-off review mainly based on records)*
Twigg 2015[24]	**S1. Are there clear research questions?** *Yes* **S2. Do the collected data allow to address the research questions?** *Yes*	Quantitative non-randomised	**3.1. Are the participants representative of the target population?** *Can't tell (no indication of attempts to recruit a representative sample)* **3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?** *Yes (details recorded for intervention components and associated outcomes)* **3.3. Are there complete outcome data?** *Can't tell (limited response for resource use outcomes)* **3.4. Are the confounders accounted for in the design and analysis?** *No (uncontrolled before/after study)* **3.5. During the study period, is the intervention administered (or exposure occurred) as intended?** *Can't tell (approx. 30% withdrawal rate)*