# Additional File 3: Table S:1. Methodological quality of included studies using the QASTDD tool.

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| QASTDD tool criteria | | Abraham et al. (2010) | | AbuDagga et al. (2014) | | Anderson et al. (2015) | | Anderson et al. (2018) | | Baik et al. (2016) | Boon et al. (2008) | | Bourke et al. (2012) | | Brais et al. (2017) | |
| 1. Explicit theoretical framework | | 3 | | 1 | | 1 | | 1 | | 1 | 2 | | 3 | | 1 | |
| 1. Statement of aims/objectives in main body of report | | 3 | | 3 | | 2 | | 3 | | 3 | 3 | | 2 | | 3 | |
| 1. Clear description of research setting | | 3 | | 3 | | 3 | | 3 | | 2 | 3 | | 3 | | 3 | |
| 1. Evidence of sample size considered in terms of analysis | | 2 | | 1 | | 2 | | 1 | | 1 | 2 | | 2 | | 1 | |
| 1. Representative sample of target group of a reasonable size | | 3 | | 2 | | 3 | | 2 | | 2 | 2 | | 2 | | 2 | |
| 1. Description of procedure for data collection | | 3 | | 3 | | 2 | | 1 | | 3 | 3 | | 2 | | 3 | |
| 1. Rationale for choice of data collection tool(s) | | 0 | | 2 | | 3 | | 2 | | 0 | 2 | | 2 | | 1 | |
| 1. Detailed recruitment data | | 3 | | 1 | | 3 | | 3 | | 3 | 2 | | 1 | | 3 | |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | | 0 | | 0 | | 2 | | 3 | | 0 | 0 | | 1 | | 1 | |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | | 2 | | 3 | | 3 | | 3 | | 3 | 2 | | 3 | | 3 | |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule | |  | |  | |  | |  | |  |  | |  | |  | |
| 1. Fit between research question and method analysis | | 3 | | 3 | | 3 | | 3 | | 3 | 3 | | 3 | | 3 | |
| 1. Good justification for analytical method selected | | 1 | | 2 | | 3 | | 3 | | 3 | 2 | | 3 | | 2 | |
| 1. QUALITATIVE only: Assessment of reliability of analytical process | |  | |  | |  | |  | |  |  | |  | |  | |
| 1. Evidence of user involvement in design | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 | |
| 1. Strengths and limitations critically discussed | | 2 | | 2 | | 2 | | 2 | | 3 | 2 | | 2 | | 2 | |
| Total score/maximum score | | 28/42 | | 26/42 | | 32/42 | | 30/42 | | 27/42 | 28/42 | | 29/42 | | 28/42 | |
| Total score (%) | | 67% | | 62% | | 76% | | 71% | | 64% | 67% | | 69% | | 67% | |
| QASTDD tool criteria | Burden et al. (2015) | | Carracedo-Martinez et al al. (2017) | | Chamberlain et al. (2014) | | Chitagunta et al. (2009) | | Chressanthis et al. (2012) | | | Conti et al. (2012) | | DeVore et al. (2018) | | Donohue et al. (2018) | |
| 1. Explicit theoretical framework | 2 | | 1 | | 1 | | 2 | | 2 | | | 3 | | 2 | | 2 | |
| 1. Statement of aims/objectives in main body of report | 3 | | 2 | | 3 | | 2 | | 3 | | | 3 | | 3 | | 3 | |
| 1. Clear description of research setting | 3 | | 2 | | 3 | | 3 | | 2 | | | 3 | | 2 | | 3 | |
| 1. Evidence of sample size considered in terms of analysis | 2 | | 1 | | 2 | | 2 | | 2 | | | 2 | | 3 | | 1 | |
| 1. Representative sample of target group of a reasonable size | 3 | | 1 | | 3 | | 2 | | 2 | | | 2 | | 3 | | 2 | |
| 1. Description of procedure for data collection | 3 | | 2 | | 3 | | 3 | | 2 | | | 3 | | 3 | | 2 | |
| 1. Rationale for choice of data collection tool(s) | 1 | | 2 | | 2 | | 2 | | 2 | | | 1 | | 2 | | 1 | |
| 1. Detailed recruitment data | 3 | | 0 | | 3 | | 2 | | 1 | | | 1 | | 0 | | 3 | |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | 1 | | 1 | | 0 | | 2 | | 1 | | | 2 | | 0 | | 0 | |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | 3 | | 3 | | 3 | | 3 | | 2 | | | 2 | | 3 | | 3 | |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule |  | |  | |  | |  | |  | | |  | |  | |  | |
| 1. Fit between research question and method analysis | 3 | | 3 | | 3 | | 3 | | 3 | | | 3 | | 3 | | 3 | |
| 1. Good justification for analytical method selected | 2 | | 0 | | 3 | | 2 | | 3 | | | 3 | | 3 | | 3 | |
| 1. QUALITATIVE only: Assessment of reliability of analytical process |  | |  | |  | |  | |  | | |  | |  | |  | |
| 1. Evidence of user involvement in design | 0 | | 0 | | 0 | | 0 | | 0 | | | 0 | | 0 | | 0 | |
| 1. Strengths and limitations critically discussed | 2 | | 1 | | 2 | | 2 | | 1 | | | 2 | | 3 | | 3 | |
| Total score/maximum score | 31/42 | | 19/42 | | 31/42 | | 30/42 | | 26/42 | | | 30/42 | | 31/42 | | 29/42 | |
| Total score (%) | 74% | | 45% | | 74% | | 71% | | 62% | | | 71% | | 74% | | 69% | |

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| QASTDD tool criteria | | Ducharme and Abraham (2008) | | Dybdhal et al. (2011) | Friedman et al. (2010) | | Fuksa et al. (2015) | Garjon et al. (2012) | | Groves et al. (2010) | | Haider et al. (2008) | | Hickson et al. (2019) | Hirundassamee and Ratanawijitrasin (2009) | | | Hsieh and Liu (2012) | |
| 1. Explicit theoretical framework | | 3 | | 2 | 3 | | 1 | 1 | | 3 | | 1 | | 2 | 1 | | | 1 | |
| 1. Statement of aims/objectives in main body of report | | 3 | | 3 | 3 | | 3 | 3 | | 3 | | 3 | | 3 | 3 | | | 3 | |
| 1. Clear description of research setting | | 3 | | 3 | 2 | | 3 | 3 | | 3 | | 3 | | 2 | 3 | | | 3 | |
| 1. Evidence of sample size considered in terms of analysis | | 1 | | 2 | 2 | | 1 | 2 | | 2 | | 1 | | 2 | 1 | | | 1 | |
| 1. Representative sample of target group of a reasonable size | | 3 | | 2 | 2 | | 2 | 2 | | 3 | | 3 | | 3 | 2 | | | 3 | |
| 1. Description of procedure for data collection | | 3 | | 3 | 3 | | 3 | 2 | | 3 | | 3 | | 2 | 3 | | | 3 | |
| 1. Rationale for choice of data collection tool(s) | | 2 | | 2 | 1 | | 1 | 2 | | 3 | | 2 | | 1 | 1 | | | 3 | |
| 1. Detailed recruitment data | | 3 | | 3 | 2 | | 1 | 3 | | 3 | | 2 | | 3 | 2 | | | 2 | |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | | 0 | | 0 | 1 | | 0 | 0 | | 0 | | 0 | | 0 | 0 | | | 1 | |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | | 3 | | 3 | 2 | | 3 | 3 | | 2 | | 3 | | 3 | 3 | | | 3 | |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule | |  | |  |  | |  |  | |  | |  | |  |  | | |  | |
| 1. Fit between research question and method analysis | | 3 | | 3 | 3 | | 3 | 2 | | 3 | | 3 | | 3 | 2 | | | 3 | |
| 1. Good justification for analytical method selected | | 3 | | 3 | 1 | | 2 | 1 | | 3 | | 3 | | 3 | 1 | | | 3 | |
| 1. QUALITATIVE only: Assessment of reliability of analytical process | |  | |  |  | |  |  | |  | |  | |  |  | | |  | |
| 1. Evidence of user involvement in design | | 0 | | 0 | 0 | | 0 | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | |
| 1. Strengths and limitations critically discussed | | 2 | | 1 | 2 | | 2 | 1 | | 2 | | 3 | | 2 | 0 | | | 2 | |
| Total score/maximum score | | 32/42 | | 30/42 | 27/42 | | 25/42 | 25/42 | | 33/42 | | 30/42 | | 29/42 | 22/42 | | | 31/42 | |
| Total score (%) | | 76% | | 71% | 64% | | 60% | 60% | | 79% | | 71% | | 69% | 52% | | | 74% | |
| QASTDD tool criteria | | Huang et al. (2013) | | Huskamp et al. (2013) | | Iyengar et al. (2011) | Karampli et al. (2020) | | | Keating et al. (2018) | | Keating et al. (2020) | | Kennedy et al. (2020) | | | Kerezsturi et al. (2015) | King et al. (2013) | |
| 1. Explicit theoretical framework | | 1 | | 1 | | 3 | 3 | | | 1 | | 3 | | 2 | | | 1 | 2 | |
| 1. Statement of aims/objectives in main body of report | | 3 | | 3 | | 3 | 3 | | | 3 | | 3 | | 3 | | | 2 | 3 | |
| 1. Clear description of research setting | | 3 | | 3 | | 3 | 2 | | | 2 | | 2 | | 2 | | | 3 | 2 | |
| 1. Evidence of sample size considered in terms of analysis | | 1 | | 1 | | 1 | 3 | | | 1 | | 1 | | 1 | | | 1 | 2 | |
| 1. Representative sample of target group of a reasonable size | | 2 | | 2 | | 2 | 2 | | | 2 | | 2 | | 2 | | | 2 | 3 | |
| 1. Description of procedure for data collection | | 2 | | 2 | | 3 | 2 | | | 3 | | 3 | | 2 | | | 2 | 3 | |
| 1. Rationale for choice of data collection tool(s) | | 0 | | 3 | | 3 | 0 | | | 0 | | 2 | | 2 | | | 1 | 3 | |
| 1. Detailed recruitment data | | 2 | | 2 | | 2 | 0 | | | 0 | | 3 | | 3 | | | 1 | 2 | |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | | 0 | | 0 | | 3 |  | | | 3 | | 3 | | 0 | | | 3 | 1 | |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | | 2 | | 3 | | 3 |  | | | 3 | | 3 | | 3 | | | 3 | 3 | |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule | |  | |  | |  | 2 | | |  | |  | |  | | |  |  | |
| 1. Fit between research question and method analysis | | 3 | | 3 | | 3 | 3 | | | 3 | | 3 | | 3 | | | 3 | 3 | |
| 1. Good justification for analytical method selected | | 3 | | 3 | | 3 | 2 | | | 3 | | 3 | | 3 | | | 3 | 3 | |
| 1. QUALITATIVE only: Assessment of reliability of analytical process | |  | |  | |  | 1 | | |  | |  | |  | | |  |  | |
| 1. Evidence of user involvement in design | | 0 | | 0 | | 0 | 0 | | | 0 | | 0 | | 0 | | | 0 | 0 | |
| 1. Strengths and limitations critically discussed | | 2 | | 2 | | 2 | 3 | | | 2 | | 2 | | 3 | | | 2 | 2 | |
| Total score/maximum score | | 26/42 | | 28/42 | | 34/42 | 26/42 | | | 26/42 | | 31/42 | | 29/42 | | | 27/42 | 32/42 | |
| Total score (%) | | 62% | | 67% | | 81% | 62% | | | 62% | | 74% | | 69% | | | 64% | 76% | |

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| QASTDD tool criteria | King and Bearman (2017) | Knudsen et al. (2009) | Lin H et al. (2011) | Lin S et al. (2011) | Liu et al. (2011) | Liu and Gupta (2011) | Lo-Ciganic et al. (2016) | Luo et al. (2017) | Luo et al. (2018) | Luo et al. (2019) |
| 1. Explicit theoretical framework | 2 | 3 | 3 | 3 | 3 | 3 | 1 | 0 | 2 | 2 |
| 1. Statement of aims/objectives in main body of report | 2 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 |
| 1. Clear description of research setting | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 2 |
| 1. Evidence of sample size considered in terms of analysis | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 1. Representative sample of target group of a reasonable size | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 |
| 1. Description of procedure for data collection | 3 | 2 | 2 | 1 | 2 | 1 | 2 | 3 | 3 | 1 |
| 1. Rationale for choice of data collection tool(s) | 3 | 1 | 2 | 3 | 2 | 1 | 3 | 1 | 1 | 2 |
| 1. Detailed recruitment data | 2 | 3 | 1 | 2 | 1 | 0 | 2 | 0 | 0 | 3 |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | 3 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 1 |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule |  |  |  |  |  |  |  |  |  |  |
| 1. Fit between research question and method analysis | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 1. Good justification for analytical method selected | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 |
| 1. QUALITATIVE only: Assessment of reliability of analytical process |  |  |  |  |  |  |  |  |  |  |
| 1. Evidence of user involvement in design | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1. Strengths and limitations critically discussed | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 2 | 2 | 2 |
| Total score/maximum score | 33/42 | 27/42 | 27/42 | 29/42 | 27/42 | 30/42 | 28/42 | 21/42 | 28/42 | 28/42 |
| Total score (%) | 79% | 64% | 64% | 69% | 64% | 71% | 67% | 50% | 67% | 67% |

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| QASTDD tool criteria | Manchanda et al. (2008) | Martin et al. (2017) | Murphy et al. (2018) | Netherland et al. (2009) | Ohl et al. (2013) | Ohlsson et al. (2009) | Patel et al. (2015) | Potpara et al. (2017) | Rodwin et al. (2020) | Sato et al. (2012) |
| 1. Explicit theoretical framework | 3 | 1 | 1 | 3 | 2 | 3 | 1 | 2 | 2 | 1 |
| 1. Statement of aims/objectives in main body of report | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 |
| 1. Clear description of research setting | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 |
| 1. Evidence of sample size considered in terms of analysis | 2 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 |
| 1. Representative sample of target group of a reasonable size | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 1. Description of procedure for data collection | 2 | 3 | 1 | 2 | 3 | 3 | 2 | 3 | 2 | 2 |
| 1. Rationale for choice of data collection tool(s) | 2 | 2 | 1 | 1 | 2 | 3 | 1 | 2 | 1 | 2 |
| 1. Detailed recruitment data | 2 | 3 | 3 | 1 | 3 | 1 | 3 | 3 | 3 | 1 |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | 3 |  | 1 | 0 | 3 | 0 | 1 | 0 | 1 | 0 |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | 3 |  | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 3 |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule | 2 | 3 |  |  |  |  |  |  |  |  |
| 1. Fit between research question and method analysis | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 1. Good justification for analytical method selected | 3 | 1 | 1 | 2 | 3 | 3 | 3 | 2 | 3 | 3 |
| 1. QUALITATIVE only: Assessment of reliability of analytical process | 0 | 1 |  |  |  |  |  |  |  |  |
| 1. Evidence of user involvement in design | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1. Strengths and limitations critically discussed | 3 | 1 | 1 | 2 | 3 | 1 | 2 | 1 | 2 | 0 |
| Total score/maximum score | 36/48 | 29/42 | 21/42 | 24/42 | 34/42 | 30/42 | 27/42 | 26/42 | 28/42 | 24/42 |
| Total score (%) | 75% | 69% | 50% | 57% | 81% | 71% | 64% | 62% | 67% | 57% |

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| QASTDD tool criteria | Savage et al. (2012) | Scholten et al. (2015) | Steinberg et al. (2013) | Tanislav et al. (2018) | Tobin et al. (2008) | Tsai et al. (2010) | Wang et al. (2010) | Weir et al. (2012) | Wen et al. (2011) | Zhang et al. (2019) | Zhang et al. (2020) |
| 1. Explicit theoretical framework | 3 | 3 | 0 | 0 | 1 | 2 | 2 | 1 | 3 | 3 | 1 |
| 1. Statement of aims/objectives in main body of report | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| 1. Clear description of research setting | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| 1. Evidence of sample size considered in terms of analysis | 1 | 1 | 3 | 1 | 0 | 2 | 2 | 2 | 3 | 1 | 1 |
| 1. Representative sample of target group of a reasonable size | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 2 |
| 1. Description of procedure for data collection | 1 | 3 | 3 | 1 | 3 | 2 | 3 | 3 | 2 | 3 | 2 |
| 1. Rationale for choice of data collection tool(s) | 2 | 3 | 3 | 2 | 0 | 2 | 2 | 2 | 1 | 2 | 2 |
| 1. Detailed recruitment data | 2 | 2 | 3 | 1 | 2 | 3 | 3 | 2 | 3 | 2 | 2 |
| 1. QUANTITATIVE only: Statistical Assessment of reliability and validity of measurement tool(s) | 1 | 0 | 3 | 0 |  | 0 | 0 | 1 | 0 | 0 | 0 |
| 1. QUANTITATIVE only: Fit between stated research question and method of data collection | 3 | 3 | 3 | 3 |  | 2 | 3 | 3 | 2 | 3 | 3 |
| 1. QUALITATIVE only: Fit between stated research question and format and content of data collection tool e.g. interview schedule |  |  |  |  | 2 |  |  |  |  |  |  |
| 1. Fit between research question and method analysis | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 |
| 1. Good justification for analytical method selected | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 2 | 0 |
| 1. QUALITATIVE only: Assessment of reliability of analytical process |  |  |  |  | 2 |  |  |  |  |  |  |
| 1. Evidence of user involvement in design | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1. Strengths and limitations critically discussed | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 3 | 1 |
| Total score/maximum score | 28/42 | 30/42 | 33/42 | 19/42 | 21/42 | 30/42 | 30/42 | 31/42 | 31/42 | 29/42 | 21/42 |
| Total score (%) | 67% | 71% | 79% | 45% | 50% | 71% | 71% | 74% | 74% | 69% | 50% |