**SUPPLEMENTAL MATERIAL**

**Table S1.** Summary of findings for study outcomes.

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| **First Author** **(year)** | **Tool** | **Statistics** | ***N*** |
| **Disease-related knowledge (n=5)** |
| Goossense (2015) | LKQ-CHD | * 27-month follow-up\* MD±SD=1.18±9.65
 | Exp.=106Cont.=65 |
| Lee (2019) | LKQ-CHD (Korean version) | * Post\* MD±SD=10.64±15.12
 | Exp.=27Cont.=25 |
| Mackie (2014) | MyHeart | * 1-month follow-up MD=14.0±21.94
* 6 month follow up\* MD±SD=15.0±21.94
 | Exp.=24Cont.=26 |
| Mackie (2018) | MyHeart | * 18-month follow-up\* Hedge’s g=0.72 Vg=0.04
 | Exp.=58Cont.=63 |
| Mackie (2022) | MyHeart | * 6-month follow-up\* MD±SD=20.00±22.10
 | Exp.=27Cont.=25 |
| **Loss to follow-up (n=4)** |
| Bushee (2021) | - | * For 3 years\* OR=0.38, LogOR=-0.96,  VlogOR=0.08
 | Exp.=212Cont.=216 |
| Gaydos (2020) | - | * For 26 months\* OR=0.23, LogOR=-1.49,  VlogOR=0.46
 | Exp.=41Cont.=54 |
| Hergenroeder (2018) | - | * For 3 years\* OR=0.06, LogOR=-2.77,  VlogOR=2.21
 | Exp.=15Cont.=30 |
| Mackie (2018) | - | * For 24 months\* OR=0.76, LogOR=-0.27,  VlogOR=0.16
 | Exp.=58Cont.=63 |
| **Self-management (n=4)** |
| Lee (2019) | Self-care of Heart Failure Index | * Post\* MD=10.02±8.56
 | Exp.=27Cont.=25 |
| Mackie (2014) | TRAQ: self-management  | * 1-month follow-up MD=0.22±0.95
* 6 month follow up\* MD±SD=0.61±1.00
 | Exp.=24Cont.=26 |
| Mackie (2018) | TRAQ: self-management  | * 18-month follow-up\* Hedge’s g=0.46 Vg=0.03
 | Exp.=58Cont.=63 |
| Mackie (2022) | TRANSITION-Q | * 6-month follow-up\* MD±SD=11.89±0.67
 | Exp.=27Cont.=25 |

**Table S1.** Continued.

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| **First Author** **(year)** | **Tool** | **Statistics** | ***N*** |
| **Quality of life (n=3)** |
| Hwang (2022) | PCQLI | * Post\* MD=6.49±3.66
* 1-month follow-up MD±SD=5.84±3.69
 | Exp.=14Cont.=14 |
| Lee (2017) | PCQLI | * Post\* MD=1.58±14.57
* 6-month follow-up MD±SD=1.36±14.23
 | Exp.=25Cont.=31 |
| Lee (2019) | PedsQL (generic) | * Post MD±SD=0.94±15.12
 | Exp.=27Cont.=25 |
| PedsQL (cardiac) | * Post\* MD±SD=2.35±13.37
 |
| **Excess time between pediatric and ACHD care (n=2)** |
| Hergenroeder (2018) | - | * MD±SD=-5±0.28
 | Exp.=15Cont.=30 |
| Mackie (2018) | - | * MD±SD=-10.7±14.63
 | Exp.=58Cont.=63 |
| **Self-advocacy (n=2)** |
| Mackie (2014) | TRAQ: self-advocacy  | * 1-month follow-up MD=0.27±0.71
* 6-month follow-up MD±SD=0.49±0.78
 | Exp.=24Cont.=26 |
| Mackie (2018) | TRAQ: self-advocacy  | * 18-month follow-up Hedge’s g=0.09 Vg=0.03
 | Exp.=58Cont.=63 |
| **Health behavior (n=1)** |
| Hwang (2022) | Average daily steps (step/day) | * Post MD=1599.45±638.66
* 1-month follow-up MD±SD=2626.73±590.76
 | Exp.=14Cont.=14 |
| Weekdays sedentary behavior (min/day) | * Post MD=-60.46±25.34
* 1-month follow-up MD±SD=-105.68±25.56
 |
| Weekend sedentary behavior (hr/day) | * Post MD=-2.23±0.76
* 1-month follow-up MD±SD=-0.45±0.77
 |
| Average MVPA per day (min/day) | * Post MD=9.91±9.12
* 1-month follow-up MD±SD=31.12±9.41
 |

**Table S1.** Continued.

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| **First Author** **(year)** | **Tool** | **Statistics** | ***N*** |
| **Health behavior (n=1)** |
| Hwang (2022) | Consumption of convenience food | * Post OR=0.72, 95% CI=0.24 to  2.18
* 1-month follow-up OR=0.72, 95% CI=0.39 to  1.34
 | Exp.=14Cont.=14 |
| Total sleep time (min/day) | * Post MD=0.43±16.24
* 1-month follow-up MD±SD=-22.09±16.05
 |
| **Transition to ACHD care (n=1)** |
| Bushee (2021) | - | * For 2 years OR=1.62, LogOR=0.48,  VlogOR=019
 | Exp.=212Cont.=216 |
| **Unplanned cardiac hospitalizations (n=1)** |
| Bushee (2021) | - | * For 2 years OR=0.60, LogOR=-0.52,  VlogOR=0.15
 | Exp.=350Cont.=303 |
| **Deterioration of heart failure status (n=1)** |
| Hergenroeder (2018) | NYHAFS | * For 2 years OR=0.10, LogOR=-2.92,  VlogOR=2.24
 | Exp.=15Cont.=30 |

ACHD: adult congenital heart disease; CI: confidence interval; Cont.: control group; Exp.: experimental or exposure group; LKQ-CHD: Leuven Knowledge Questionnaire for Congenital Heart Disease; MD: mean difference; MVPA: moderate to vigorous intensity physical activity; NYHAFS: The New York Heart Association Functional Classification of Heart failure; OR: odds ratio; PCQLI: Pediatric Cardiac Quality of Life Inventory; PedsQL: Pediatric Quality of Life; SD: standard difference; TRAQ: Transition Readiness Assessment Questionnaire; Vg: variance of Hedge’s g; VlogOR: variance of logOR.

\*Statistics utilized for meta-analysis.

**Table S2.** GRADE scores of transition programs to adulthood for adolescents and young adults with congenital feart disease.

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| **Patient or population:** adolescents or young adults with congenital heart disease**Setting:** hospital-based or community-based settings**Intervention:** transition programs to adult health care**Comparison:** usual care or no intervention |
| **Outcomes** | **No. of Participants (Studies)** | **Anticipated Effects** **(95% CI)** | **Certainty of** **the Evidence (GRADE)** | **Comments** |
| Disease-related knowledge | 414 (5) | Hedge's g=0.89 (0.29 lower to 1.48 higher) | ⊕⊕⊝⊝abcLow | Transition interventions may increase disease-related knowledge.  |
| Self-management | 243 (4) | Hedge's g=0.67 (0.38 lower to 0.95 higher) | ⊕⊝⊝⊝dVery low | The evidence is very uncertain about the effect of transition intervention on self-management.  |
| Disease-related QoL | 136 (3) | Hedge's g=0.60 (-0.24 lower to 1.44 higher) | ⊕⊝⊝⊝adeVery low | The evidence is very uncertain about the effect of transition intervention on disease-related QoL.  |
| Loss to follow-up | 689 (4) | OR=0.41 (0.22 lower to 0.77 higher) | ⊕⊕⊝⊝afLow | Transition interventions may decrease loss to follow-up.  |
| **GRADE Working Group grades of evidence****High certainty:** we are very confident that the true effect lies close to that of the estimate of the effect.**Moderate certainty:** we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.**Low certainty:** our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.**Very low certainty:** we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect. |

CI: confidence interval; OR: odds ratio; QoL: quality of life.

aThere was a high risk of bias in some of the studies included. Therefore, the certainty of evidence was downgraded by 1 level due to risk of bias.

bStatistical heterogeneity was considerable (I2 > 80%). However, it was explained using a sub-group analysis. Therefore, we decided not to downgrade the
evidence by 1 level due to inconsistency.

cThe Hedge's g showed a large effect size (Hedge’s g > 0.75). Therefore, the certainty of evidence was upgraded by 1 level due to large effect;

dImprecise due to small sample size (< 400) (Higgins et al., 2022). Therefore, the certainty of evidence was downgraded by 1 level due to imprecision.

eStatistical heterogeneity was considerable (I2 > 80%). Therefore, the certainty of evidence was downgraded by 1 level due to inconsistency.

fThe OR showed a large effect size (OR < 0.5). Therefore, the certainty of evidence was upgraded by 1 level due to large effect.



**Figure S1.** Funnel plot for the 10 included studies.



**Figure S2.** Combining two analyses with metabind.