# Exercising With Others, Motivation, and 1-Year Maintenance of Exercise Behavior Among Workers

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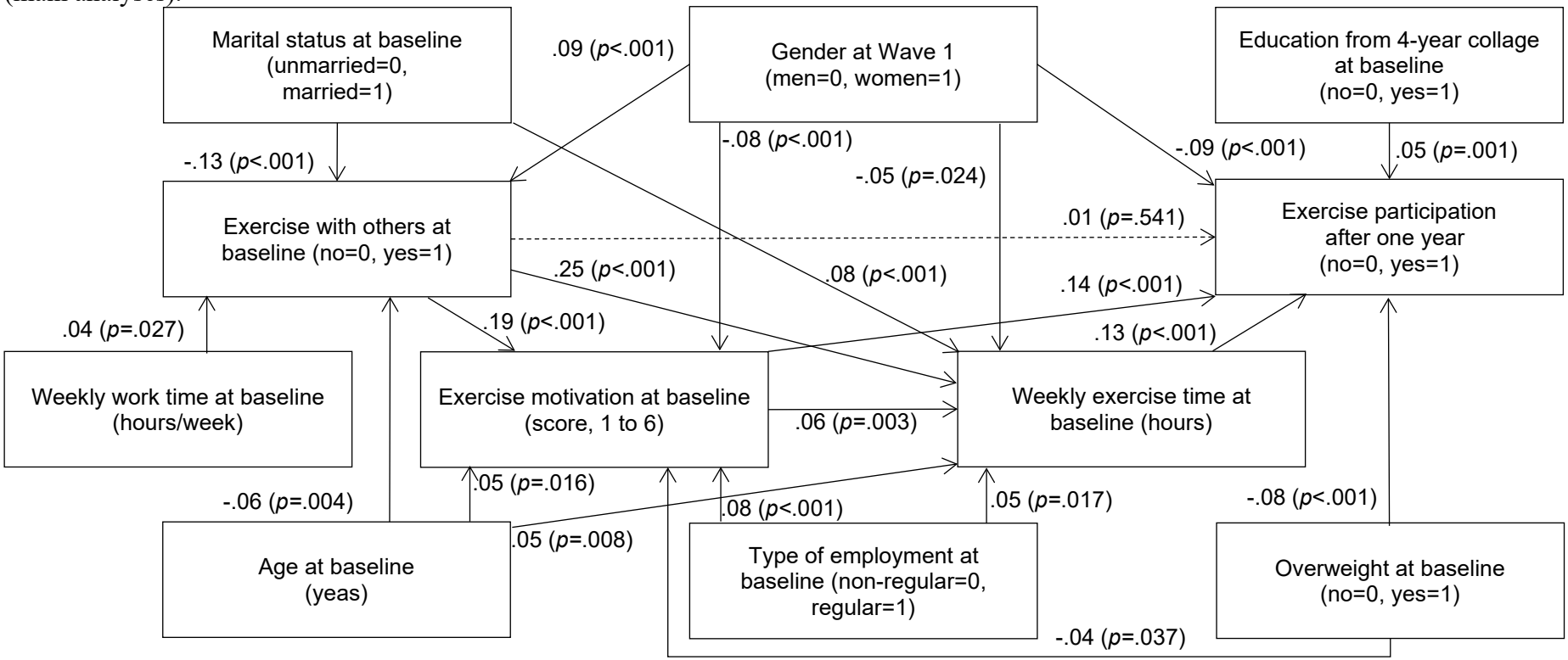
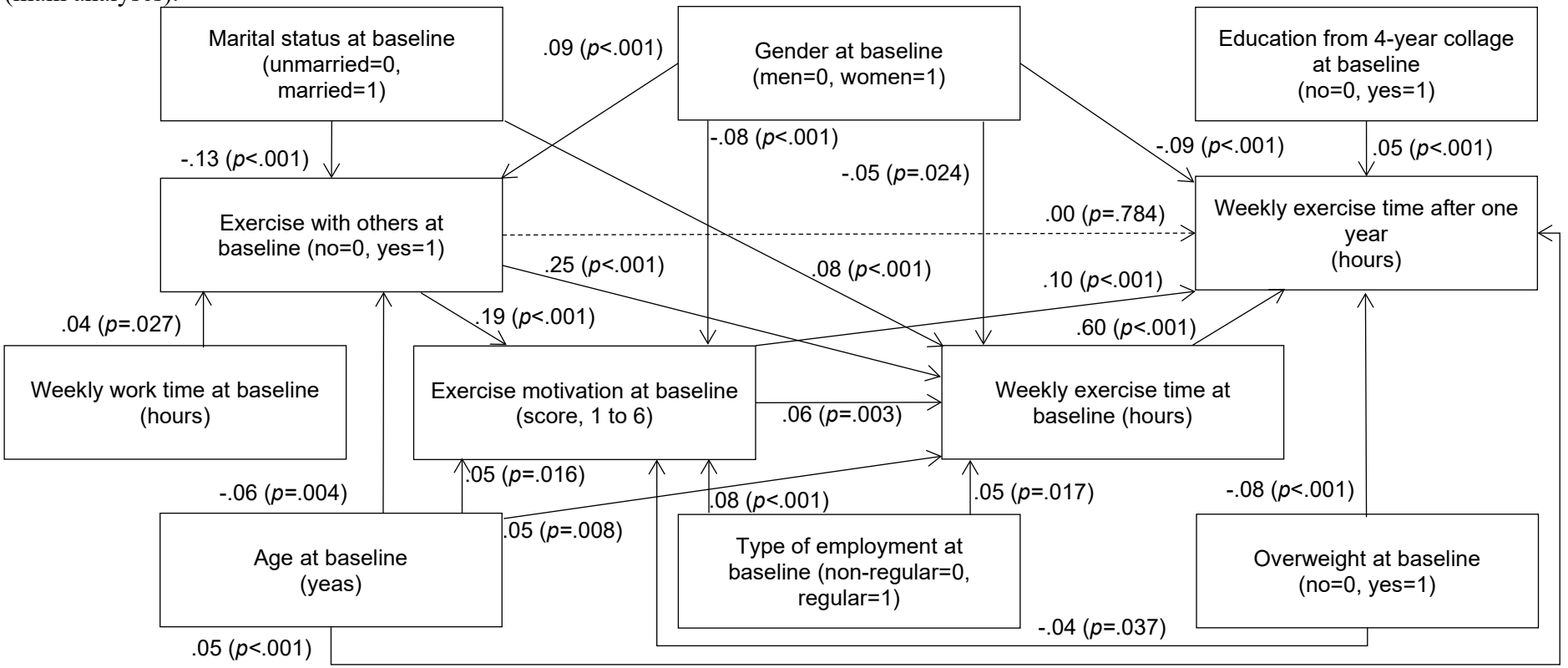



*Note.* Sold lines represent significant paths and dashed lines represent insignificant paths. Annual household income, engagement in physical work, and engagement in shift work at baseline were removed from the model because all paths from them were not statistically significant. The model included correlations within demographic factors. The standardized total and indirect effects in the path analysis are shown in Supplementary Table 1. The model fit indices were TLI > .999, CFI > .999, and RMSEA = .001.

*Supplementary Figure 2*. Detailed results of standardized path coefficients from path analysis for predicting weekly exercise time after one year (main analyses).




*Note.* Sold lines represent significant paths and dashed lines represent insignificant paths. Annual household income, engagement in physical work, and engagement in shift work at baseline were removed from the model because all paths from them were not statistically significant. The model included correlations within demographic factors. The standardized total and indirect effects in the path analysis are shown in Supplementary Table 1. The model fit indices were TLI = .996, CFI = .999, and RMSEA = .010

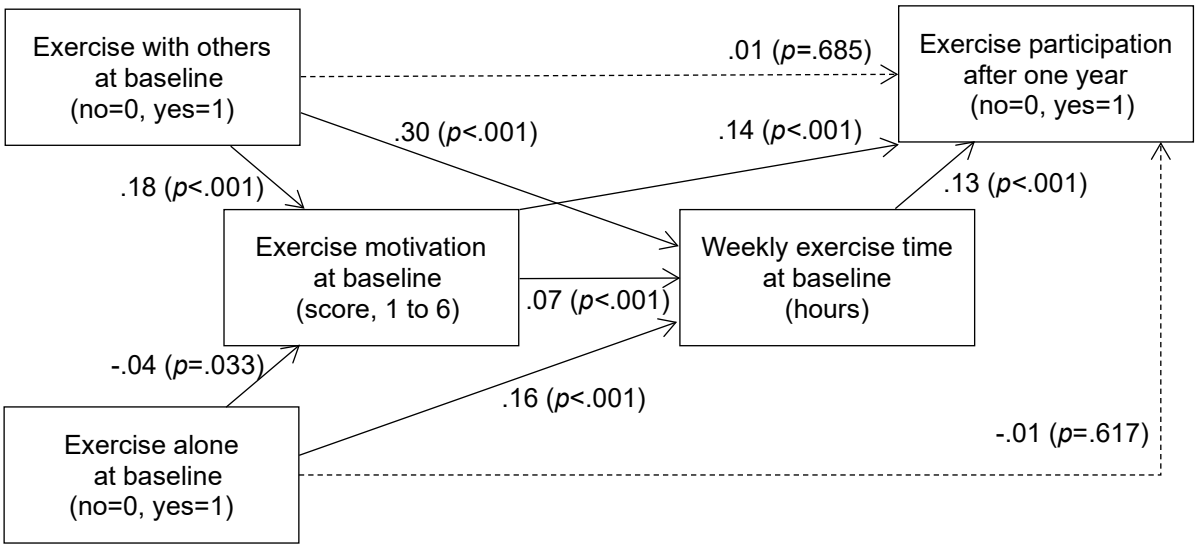
*Supplementary Table 1*. Detailed results of standardized total and indirect effects from path analyses for predicting one-year maintenance of exercise behavior (main analyses).

| | Estimated total association | | | Estimated indirect association | | |
|---|---|---|---|---|---|---|
| | Unstandardized (95%CI) | Standardized (95%CI) | p-value | Unstandardized (95%CI) | Standardized (95%CI) | p-value |
| *Model 1: predicting exercise participation after one year* | | | | | | |
| Gender at baseline (men=0, women=1) | -0.09 (-0.12, -0.06) | -.10 (-.14, -.06) | <.001 | -0.01 (-0.02, -0.00) | -.01 (-.02, .00) | .013 |
| Age at baseline (years) | 0.00 (0.00, 0.00) | .01 (.00, .02) | .045 | 0.00 (0.00, 0.00) | .01 (.00, .02) | .045 |
| Current marital status at baseline (unmarried=0, married=1) | 0.00 (-0.01, 0.01) | .00 (-.01, .01) | .776 | 0.00 (-0.01, 0.01) | .00 (-.01, .01) | .776 |
| Education from 4-year collage at baseline (no=0, yes=1) | 0.05 (0.01, 0.08) | .05 (.01, .09) | .009 | — | — | |
| Overweight at baseline (no=0, yes=1) | -0.09 (-0.13, -0.05) | -.08 (-.12, -.05) | <.001 | -0.01 (-0.01, -0.00) | -.01 (-.01, -.00) | .038 |
| Type of employment at baseline (non-regular=0, regular=1) | 0.02 (0.01, 0.03) | .02 (.01, .03) | <.001 | 0.02 (0.01, 0.03) | .02 (.01, .03) | <.001 |
| Weekly work time at baseline (hours) | 0.00 (0.00, 0.00) | .00 (.00, .01) | .019 | 0.00 (0.00, 0.00) | .00 (.00, .01) | .019 |
| Weekly exercise time at baseline (hours) | 0.01 (0.01, 0.02) | .13 (.09, .16) | <.001 | — | — | |
| Exercise with others at baseline (no=0, yes=1) | 0.07 (0.04, 0.11) | .07 (.04, .11) | <.001 | 0.06 (0.05, 0.07) | .06 (.05, .07) | <.001 |
| Exercise motivation at baseline (score, 1 to 6) | 0.05 (0.04, 0.06) | .14 (.10, .18) | .001 | 0.00 (0.00, 0.00) | .01 (.00, .01) | .004 |
| *Model 2: predicting exercise time after one year* | | | | | | |
| Gender at baseline (men=0, women=1) | -0.18 (-0.40, 0.04) | -.02 (-.05, .00) | .096 | -0.18 (-0.40, 0.04) | -.02 (-.05, .00) | .096 |
| Age at baseline (years) | 0.03 (0.02, 0.05) | .08 (.04, .12) | <.001 | 0.01 (-0.00, 0.02) | .03 (-.00, .05) | .063 |
| Current marital status at baseline (unmarried=0, married=1) | 0.19 (0.01, 0.38) | .03 (.00, .05) | .035 | 0.19 (0.01, 0.38) | .03 (.00, .05) | .035 |
| Education from 4-year collage at baseline (no=0, yes=1) | 0.39 (0.17, 0.62) | .05 (.02, .08) | .001 | — | — | |
| Overweight at baseline (no=0, yes=1) | -0.05 (-0.11, -0.00) | -.01 (-.01, .00) | .041 | -0.05 (-0.11, -0.00) | -.01 (-.01, -.00) | .041 |
| Type of employment at baseline (non-regular=0, regular=1) | 0.37 (0.12, 0.62) | .04 (.01, .06) | .004 | 0.37 (0.12, 0.62) | .04 (.01, .06) | .004 |
| Weekly work time at baseline (hours) | 0.00 (0.00, 0.01) | .01 (.00, .02) | .025 | 0.00 (0.00, 0.01) | .01 (.00, .02) | .025 |
| Weekly exercise time at baseline (hours) | 0.62 (0.53, 0.69) | .60 (.54, .65) | .001 | — | — | |
| Exercise with others at baseline (no=0, yes=1) | 1.66 (1.28, 2.06) | .18 (.14, .22) | <.001 | 1.62 (1.37, 1.90) | .18 (.15, .20) | <.001 |
| Exercise motivation at baseline (score, 1 to 6) | 0.41 (0.30, 0.52) | .13 (.09, .16) | .001 | 0.11 (0.04, 0.18) | .03 (.01, .05) | .006 |

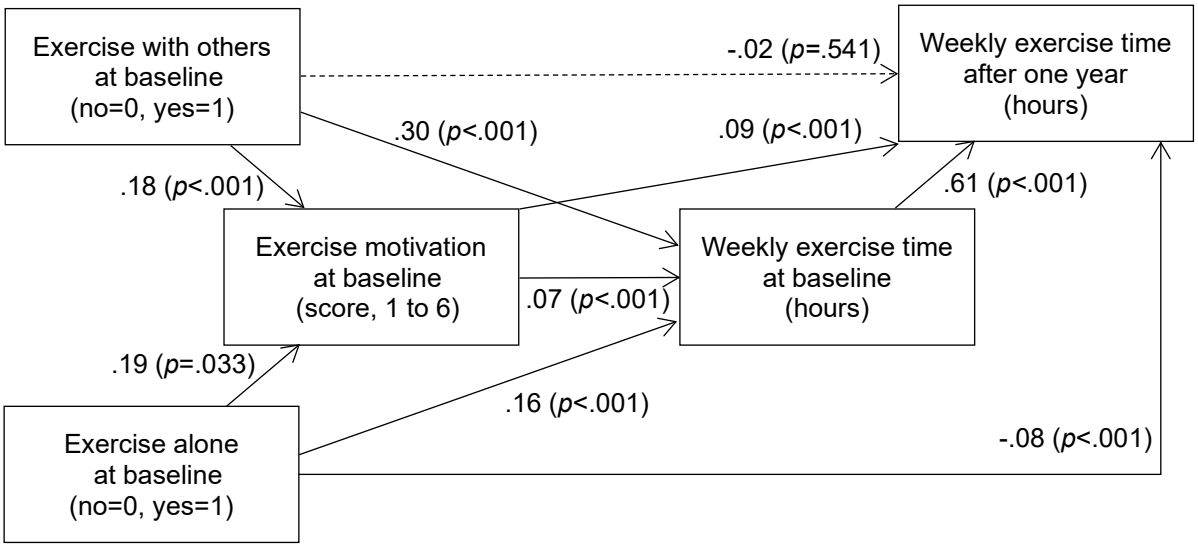
*Note*. The one-year maintenance of exercise behavior was treated as exercise participation after one year in Model 1 and weekly exercise time after one year in Model 2. Annual household income, engagement in physical work, and engagement in shift work at baseline were removed from the model because all paths from them were not statistically significant. The standardized path coefficients in the path analyses are shown in Supplementary Figure 1 and 2 for Model 1 and 2, respectively. The model fit indices were TLI > .999, CFI > .999, and RMSEA = .001 for Model 1; and TLI = .996, CFI = .999, and RMSEA = .010 for Model 2.

*Supplementary Figure 3.* Key results of standardized path coefficients from path analyses for predicting one-year maintenance of exercise behavior (sensitivity analyses 1).

**A. Model 1: Predicting exercise participation after one year**




**B. Model 2: Predicting weekly exercise time after one year**




*Note*. The one-year maintenance of exercise behavior was treated as exercise participation after one year in Model 1 and weekly exercise time after one year in Model 2. Sold lines represent significant paths and dashed lines represent insignificant paths. While the actual models contain demographic factors and cross-sectional correlation between exercise with others and alone at baseline, they are not displayed here for clarity. The standardized total and indirect associations in the path analyses for the main variables are shown in Supplementary Table 2 . The model fit indices were TLI > .999, CFI > .999, and RMSEA < .001 for Model 1; and TLI = .995, CFI = .999, and RMSEA = .010 for Model 2.

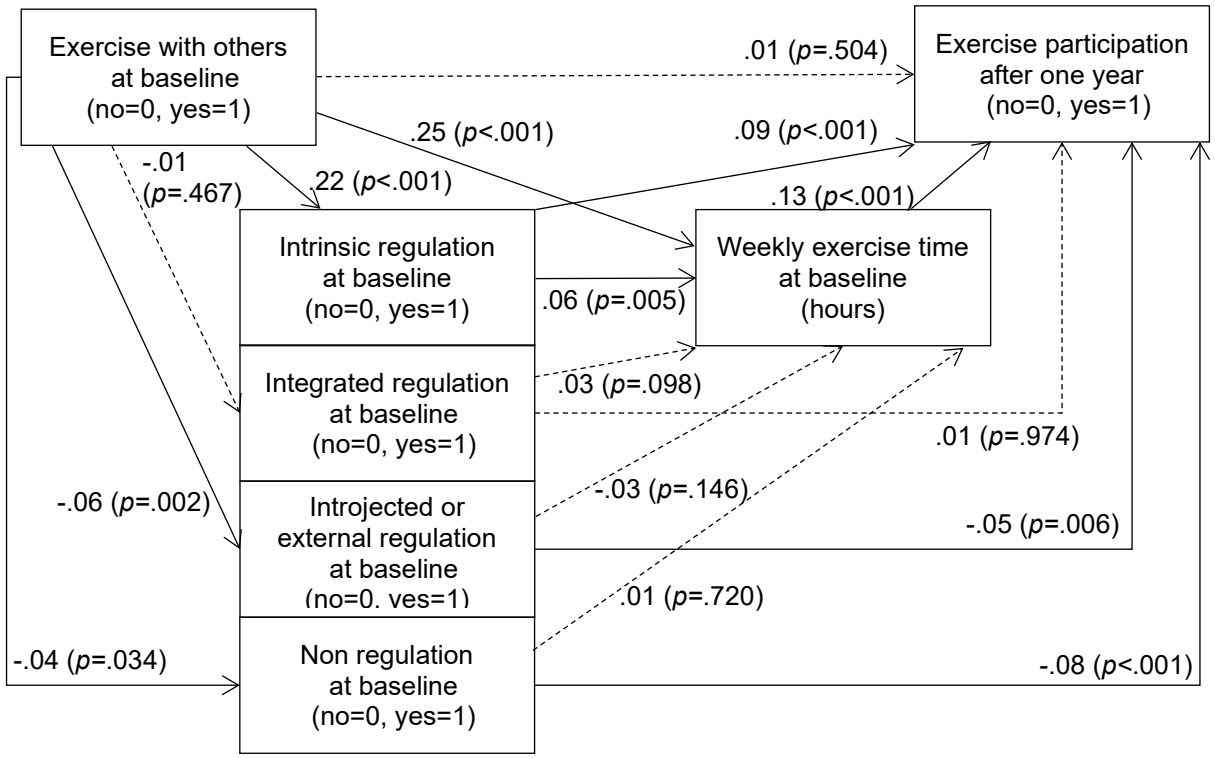
*Supplementary Table 2*. Key results of standardized total and indirect associations in path analyses for predicting one-year maintenance of exercise behavior (sensitivity analyses 1).

| | Estimated total association | | | Estimated indirect association | | |
|---|---|---|---|---|---|---|
| | Unstandardized (95%CI) | Standardized (95%CI) | p-value | Unstandardized (95%CI) | Standardized (95%CI) | p-value |
| *Model 1: predicting exercise participation after one year* | | | | | | |
| Weekly exercise time at baseline (hours) | 0.01 (0.01, 0.02) | .13 (.09, .16) | <.001 | — | — | |
| Exercise with others at baseline (no=0, yes=1) | 0.07 (0.04, 0.11) | .07 (.04, .11) | <.001 | 0.06 (0.05, 0.08) | .06 (.05, .08) | <.001 |
| Exercise alone at baseline (no=0, yes=1) | 0.01 (-0.08, 0.11) | .00 (-.03, .05) | .787 | 0.03 (0.01, 0.06) | .01 (.01, .02) | .001 |
| Exercise motivation at baseline (score, 1 to 6) | 0.05 (0.04, 0.06) | .14 (.10, .18) | .001 | 0.00 (0.00, 0.01) | .01 (.00, .01) | .001 |
| *Model 2: predicting weekly exercise time after one year* | | | | | | |
| Weekly exercise time at baseline (hours) | 0.63 (0.55, 0.70) | .61 (.55, .66) | .001 | — | — | |
| Exercise with others at baseline (no=0, yes=1) | 1.69 (1.30, 2.10) | .18 (.14, .22) | <.001 | 1.90 (1.62, 2.22) | .21 (.18, .24) | <.001 |
| Exercise alone at baseline (no=0, yes=1) | 0.33 (-0.84, 1.36) | .02 (-.04, .06) | .563 | 2.00 (1.57, 2.45) | .09 (.07, .11) | <.001 |
| Exercise motivation at baseline (score, 1 to 6) | 0.42 (0.31, 0.53) | .13 (.10, .16) | .001 | 0.13 (0.06, 0.20) | .04 (.02, .06) | .001 |

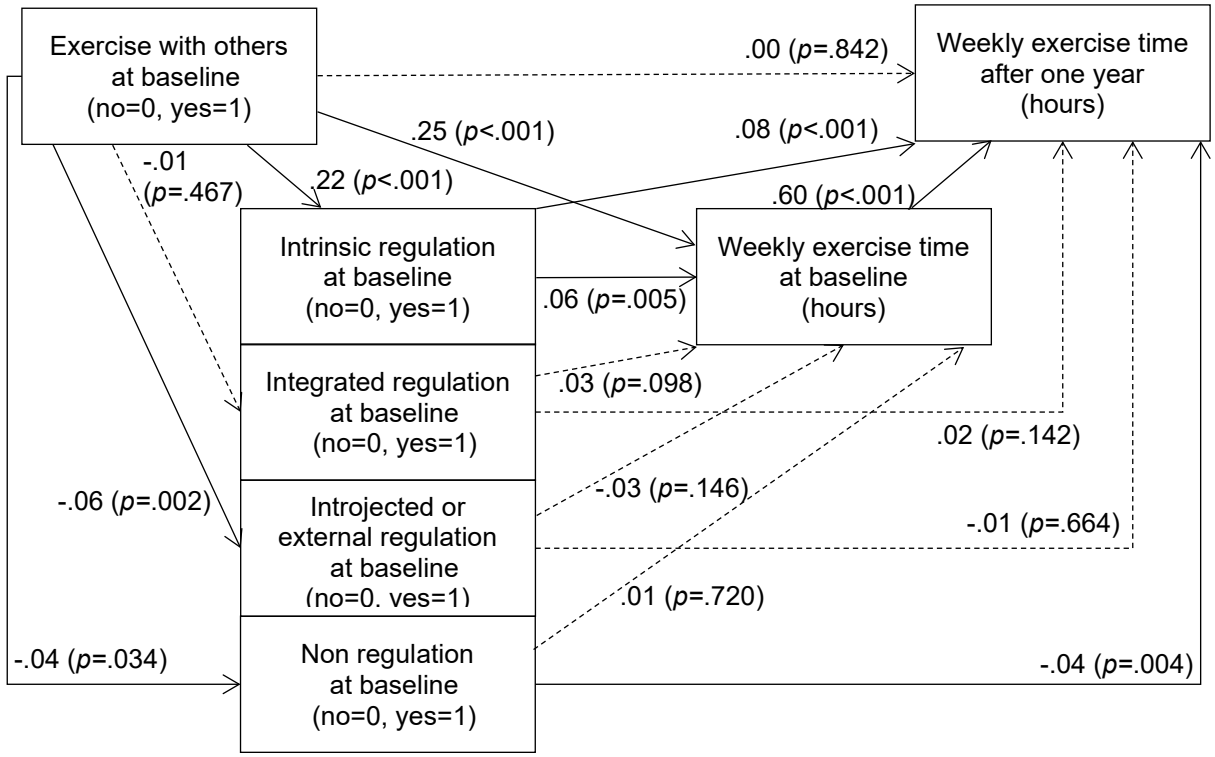
*Note*. The one-year maintenance of exercise behavior was treated as exercise participation after one year in Model 1 and weekly exercise time after one year in Model 2. For clarity, this table does not display the standardized total and indirect effects of the demographic factors. The standardized path coefficients of the main variables in the path analyses are shown in Supplemtary Figure 3. The model fit indices were TLI > .999, CFI > .999, and RMSEA < .001 for Model 1; and TLI = .995, CFI = .999, and RMSEA = .010 for Model 2.
95%CI, 95% confidence interval.

*Supplementary Figure 4.* Key results of standardized path coefficients from path analyses for predicting one-year maintenance of exercise behavior (sensitivity analyses 2).

**A. Model 1: Predicting exercise participation after one year**




**B. Model 2: Predicting weekly exercise time after one year**




*Note*. The one-year maintenance of exercise behavior was treated as exercise participation after one year in Model 1 and weekly exercise time after one year in Model 2. Sold lines represent significant paths and dashed lines represent insignificant paths. While the actual models contain demographic factors and cross-sectional correlations within the variables for exercise

motivation, they are not displayed here for clarity. The standardized total and indirect effects of the main variables in the path analyses are shown in Supplementary Table 3. The model fit indices were TLI > .999, CFI > .999, and RMSEA < .001 for Model 1; and TLI = .999, CFI = .996, and RMSEA = .008 for Model 2.

*Supplementary Table 3*. Key results of standardized total and indirect effects in path analyses for predicting one-year maintenance of exercise behavior (sensitivity analyses 2).

| | Estimated total association | | | Estimated indirect association | | |
|---|---|---|---|---|---|---|
| | Unstandardized (95%CI) | Standardized (95%CI) | p-value | Unstandardized (95%CI) | Standardized (95%CI) | p-value |
| *Model 1: predicting exercise participation after one year* | | | | | | |
| Weekly exercise time at baseline (hours) | 0.01 (0.01, 0.02) | .13 (.09, .16) | <.001 | — | — | |
| Exercise with others at baseline (no=0, yes=1) | 0.07 (0.04, 0.11) | .07 (.04, .11) | <.001 | 0.06 (0.05, 0.07) | .06 (.05, .07) | <.001 |
| Intrinsic regulation at baseline (no=0, yes=1) | 0.08 (0.05, 0.11) | .09 (.06, .13) | <.001 | 0.01 (0.00, 0.01) | .01 (.00, .01) | .003 |
| Integrated regulation at baseline (no=0, yes=1) | 0.01 (-0.04, 0.05) | .01 (-.04, .04) | .823 | 0.01 (-0.00, 0.01) | .00 (-.00, .01) | .081 |
| Introjected or external regulation at baseline (no=0, yes=1) | -0.09 (-0.16, -0.02) | -.06 (-.10, -.01) | .009 | -0.01 (-0.01, 0.00) | .00 (-.01, .00) | .079 |
| Non regulation at baseline (no=0, yes=1) | -0.20 (-0.31, -0.09) | -.08 (-.12, -.03) | .001 | 0.00 (-0.01, 0.02) | .00 (-.00, .01) | .673 |
| *Model 2: predicting weekly exercise time after one year* | | | | | | |
| Weekly exercise time at baseline (hours) | 0.62 (0.54, 0.69) | .60 (.54, .65) | .001 | — | — | |
| Exercise with others at baseline (no=0, yes=1) | 1.65 (1.27, 2.04) | .18 (.14, .22) | <.001 | 1.62 (1.36, 1.90) | .18 (.15, .20) | <.001 |
| Intrinsic regulation at baseline (no=0, yes=1) | 0.93 (0.60, 1.26) | .11 (.08, .15) | <.001 | 0.28 (0.08, 0.47) | .03 (.01, .06) | .005 |
| Integrated regulation at baseline (no=0, yes=1) | 0.47 (0.05, 0.91) | .04 (.01, .08) | .028 | 0.21 (-0.03, 0.47) | .02 (-.00, .04) | .092 |
| Introjected or external regulation at baseline (no=0, yes=1) | -0.35 (-0.83, 0.17) | -.02 (-.06, .01) | .190 | -0.25 (-0.53, 0.04) | -.02 (-.04, .00) | .087 |
| Non regulation at baseline (no=0, yes=1) | -0.93 (-1.54, -0.18) | -.04 (-.07, -.01) | .016 | 0.09 (-0.42, 0.68) | .00 (-.02, .03) | .691 |

*Note*. The one-year maintenance of exercise behavior was treated as exercise participation after one year in Model 1 and weekly exercise time after one year in Model 2. For clarity, this table does not display the standardized total and indirect effects of the demographic factors. The standardized path coefficients of the main variables in the path analyses are shown in Supplementary Figure 4. The model fit indices were TLI > .999, CFI > .999, and RMSEA < .001 for Model 1; and TLI = .999, CFI = .996, and RMSEA = .008 for Model 2. 95%CI, 95% confidence interval.