



SOAR
STUDY OF ADOLESCENT RESILIENCE
MILLENNIUM COHORT PROGRAM

In partnership with
Military Community & Family Policy, OSD

Predictive Insights from the Study of Adolescent Resilience

Hope Seib McMaster, PhD



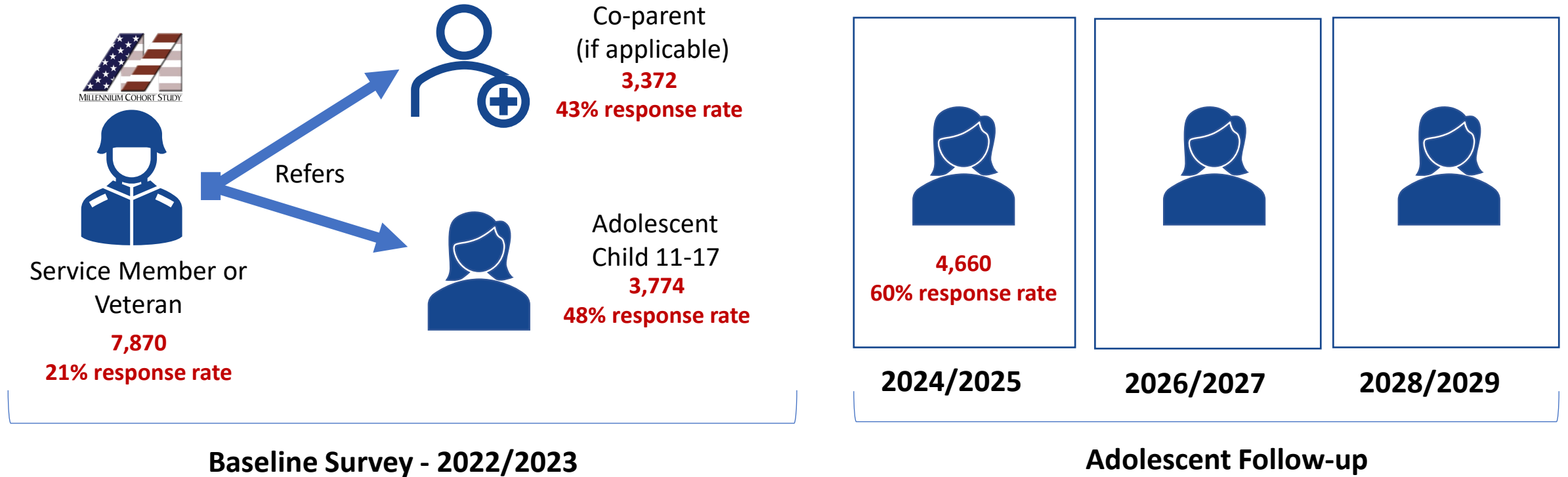
FAMILY READINESS IS MILITARY READINESS

- By supporting military families, we reduce the risk of service member distraction, underperformance, and separation from service.





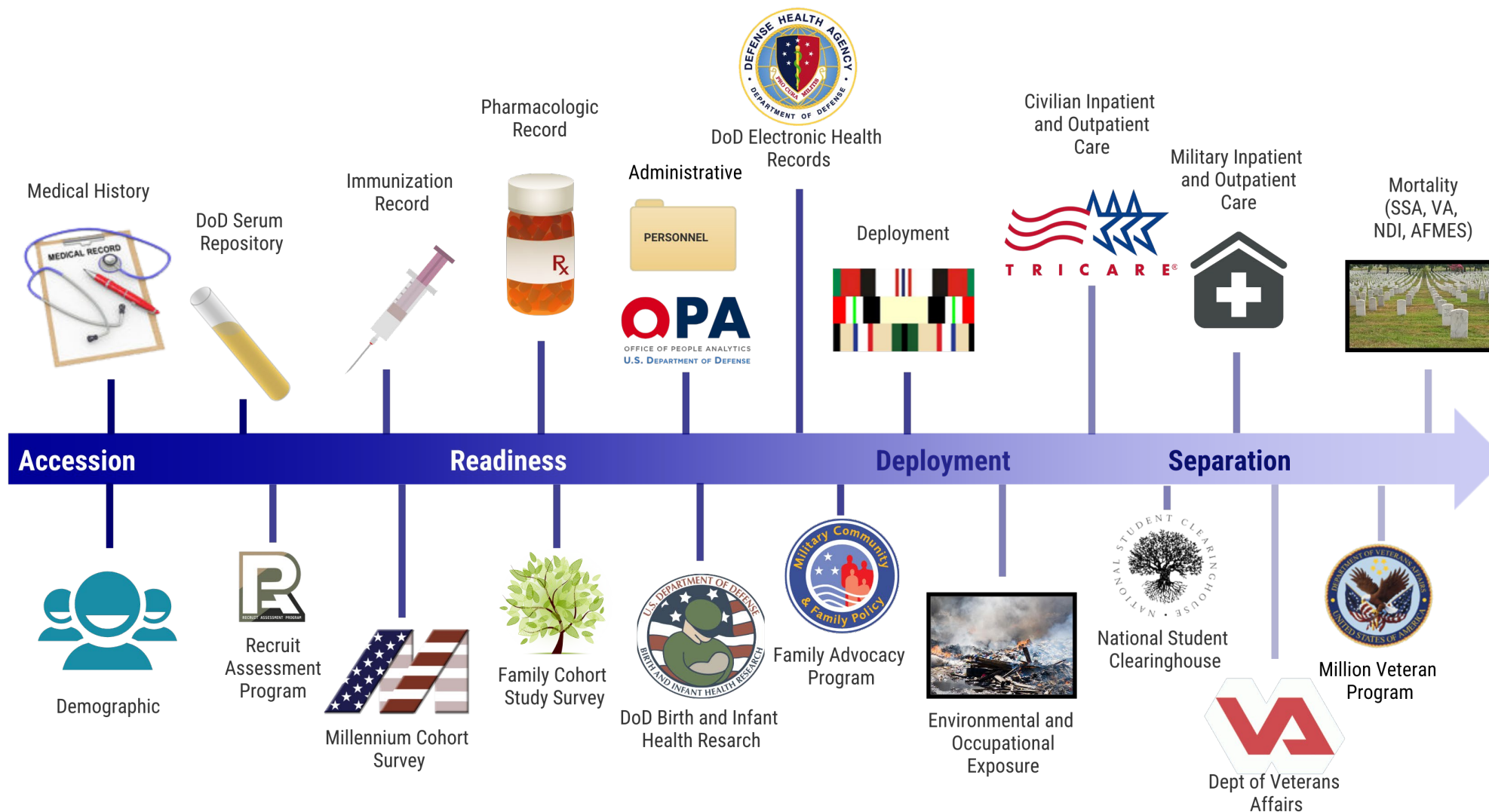
STUDY DESIGN



MOST COMPREHENSIVE STUDY OF MILITARY-CONNECTED ADOLESCENTS UNDERTAKEN BY THE DoW



ESTABLISHED DATA LINKAGES

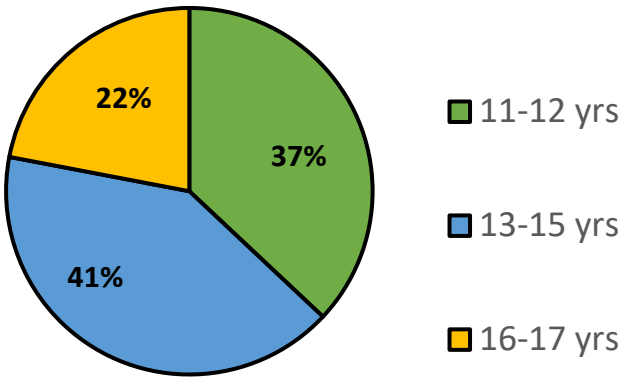




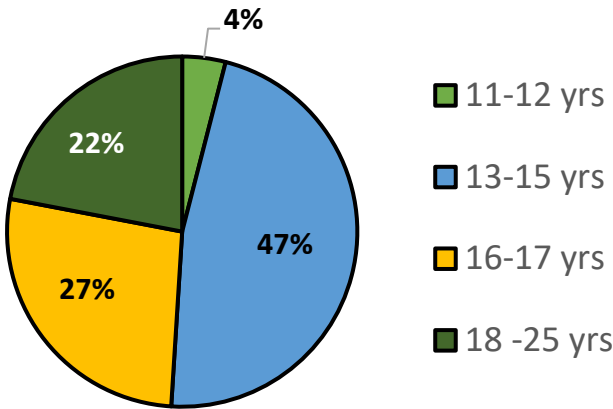
ADOLESCENT CHARACTERISTICS



	Baseline: 2022/23	Follow-up: 2024/25
Female	50% (n = 1884)	50% (n = 2238)
Rank		
Junior Enlisted (E1-E4)	13% (n = 494)	14% (n = 639)
Senior Enlisted (E5+)	45% (n = 1707)	46% (n = 2154)
Junior Officers (O1-O3)	13% (n = 479)	13% (n = 584)
Senior Officers (O4+)	29% (n = 1094)	28% (n = 1283)
Service		
Army	42% (n = 1590)	43% (n = 2010)
Navy	17% (n = 625)	15% (n = 704)
Marine Corps	7% (n = 273)	7% (n = 340)
Air Force	32% (n = 1216)	32% (n = 1506)
Coast Guard	2% (n = 70)	2% (n = 100)
Veteran	50% (n = 1895)	54% (n = 2468)



Baseline Age



Follow-up Age



ADOLESCENT MILITARY EXPERIENCES OVER LAST 2 YEARS

(with active duty or recently separated parent, n=2588)



PCS move
35% (n=915)



Changed schools
33% (n=854)



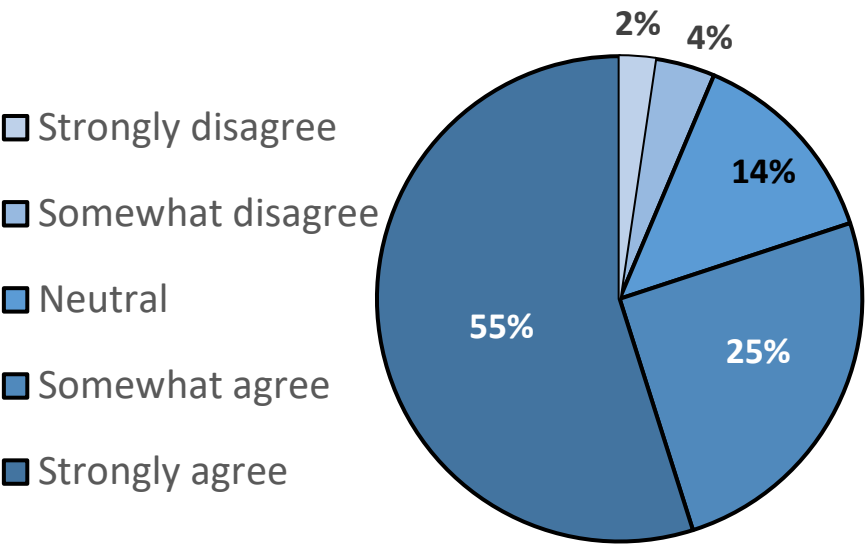
**Extended
parental absence**
38% (n=976)



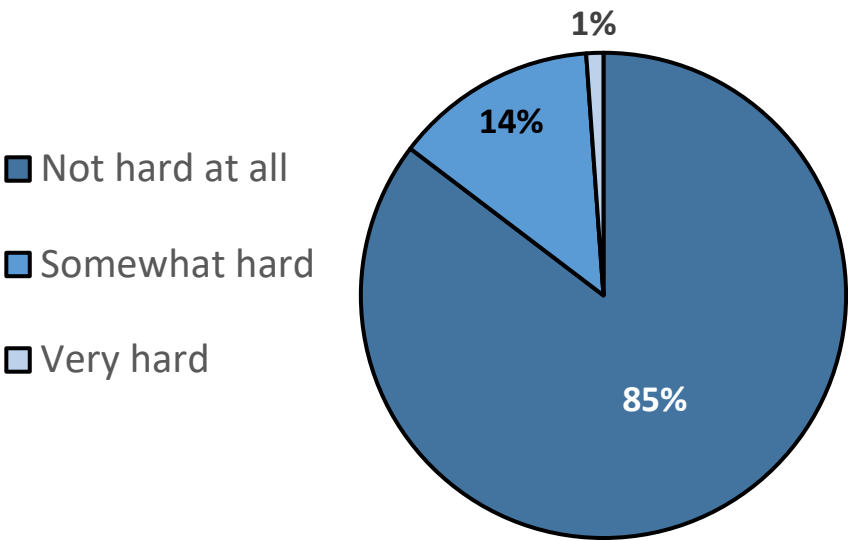
CURRENT FINANCIAL HARDSHIP

ADOLESCENT REPORT/ACTIVE DUTY 2024/2025, N=1290

I feel secure about our family's financial future.



How hard is it for your family to pay for the very basics like food, housing, medical care, and heating/air conditioning?





PREDICTORS OF RETENTION OR SEPARATION FROM SERVICE



Retention



Separation



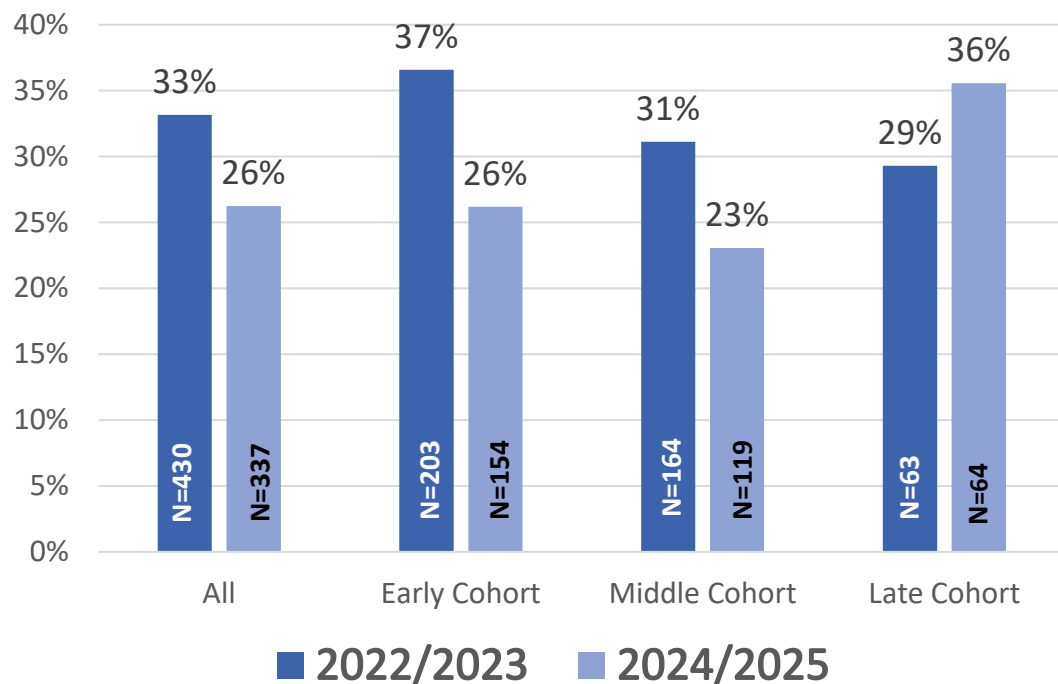
ADOLESCENT SUPPORT FOR SERVICE

ADOLESCENT REPORT

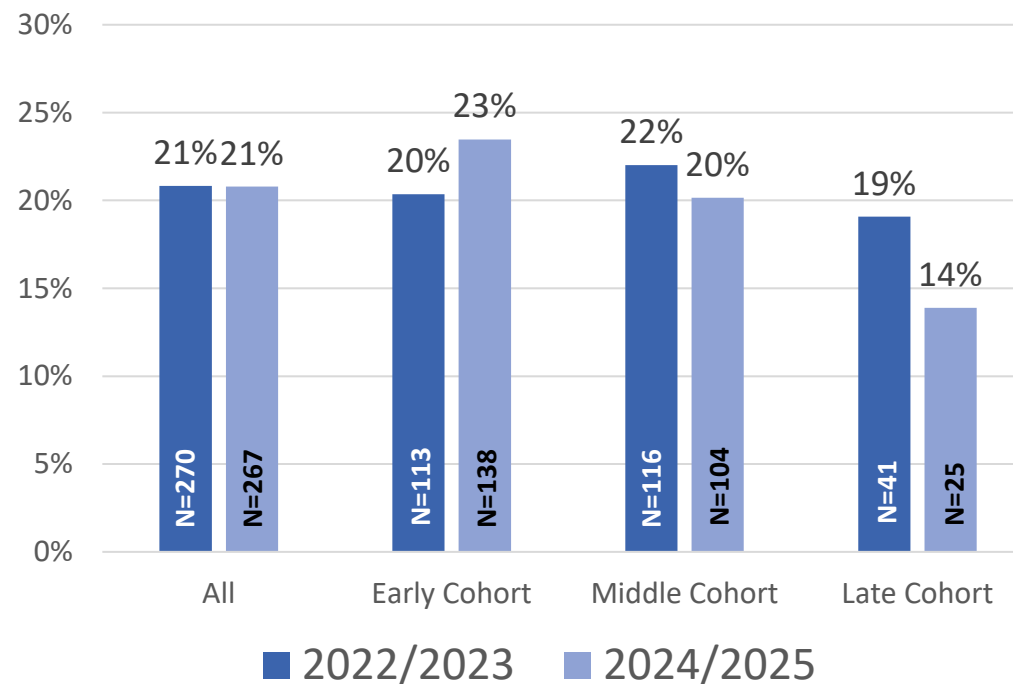
Do you think your parent should stay or leave the military?

Early cohort = 11-12 years at baseline
Middle cohort = 13-15 years at baseline
Late cohort = 16-17 years at baseline

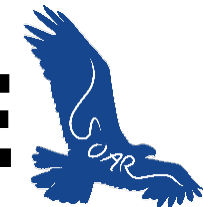
Stay in Military



Leave Military



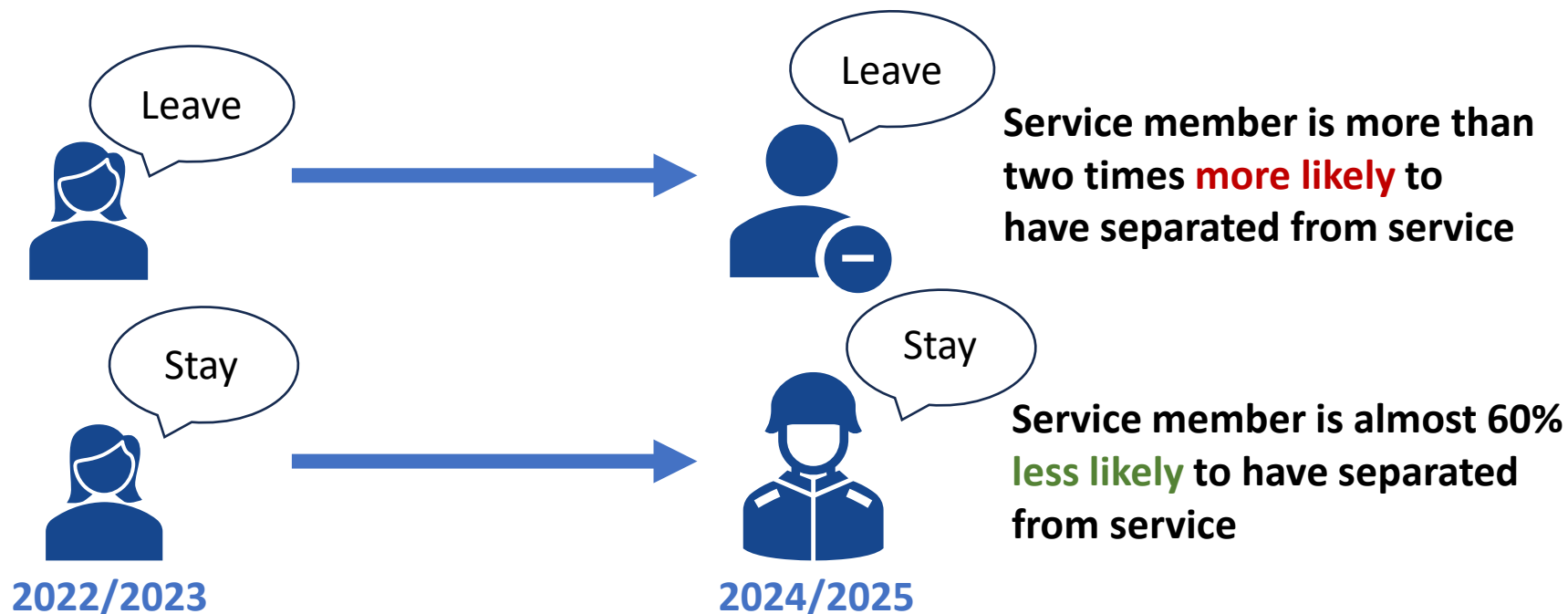
Note: Response options included stay, leave, and no opinion.



ADOLESCENT SUPPORT FOR MILITARY SERVICE

PREDICTING SEPARATION FROM SERVICE

Do you think your parent should stay or leave the military?



Reference group	Baseline Predictor	Effect Size	95% CI	n
No opinion	I Favor Leaving	2.247	1.528 – 3.305	960
No opinion	I Favor Staying	.407	0.259 – 0.640	960

Note: These logistic regressions analyses controlled for adolescent age, sex, and service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.

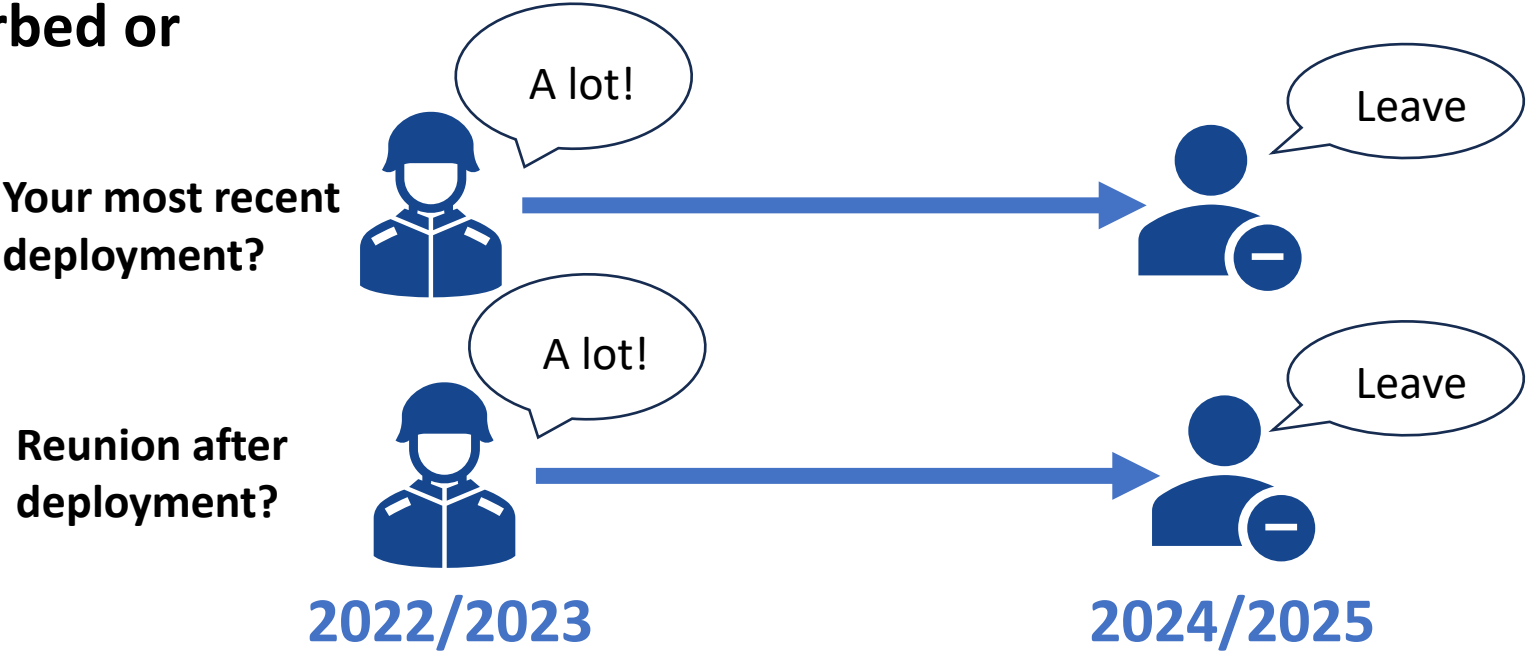


ADOLESCENT MILITARY LIFE STRESS



PREDICTING SEPARATION FROM SERVICE

How much was your child disturbed or upset by:



For every level of increased distress experienced by the child – we see a **22% greater chance of separation from service.**

<u>Continuous</u>	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
1= not at all to 5 = a lot	Your most recent deployment	1.222	1.080 – 1.382	1375
1= not at all to 5 = a lot	Reunion after deployment	1.217	1.035 – 1.406	1375

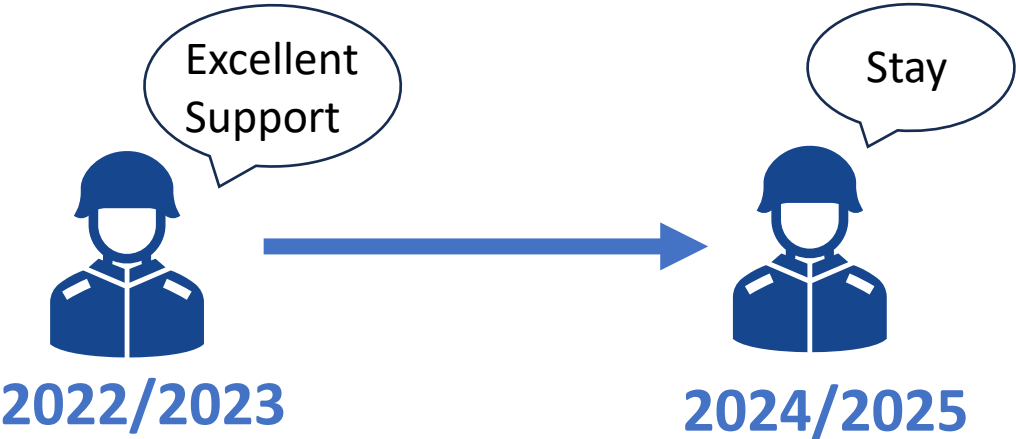
Note: These logistic regressions analyses controlled for adolescent age, sex, and service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



MILITARY SUPPORT FOR YOUR FAMILY

PREDICTING SEPARATION FROM SERVICE

Overall, how would you rate the military’s efforts to help your family deal with the stresses of military life?



When service members feel the military is doing a good job helping their families with stress, they are significantly **less likely** to leave the service.

Continuous	Baseline Predictor	Effect Size	95% CI	n
1= poor to 5 = excellent	Military Support for Family	0.853	0.758 – 0.960	1555

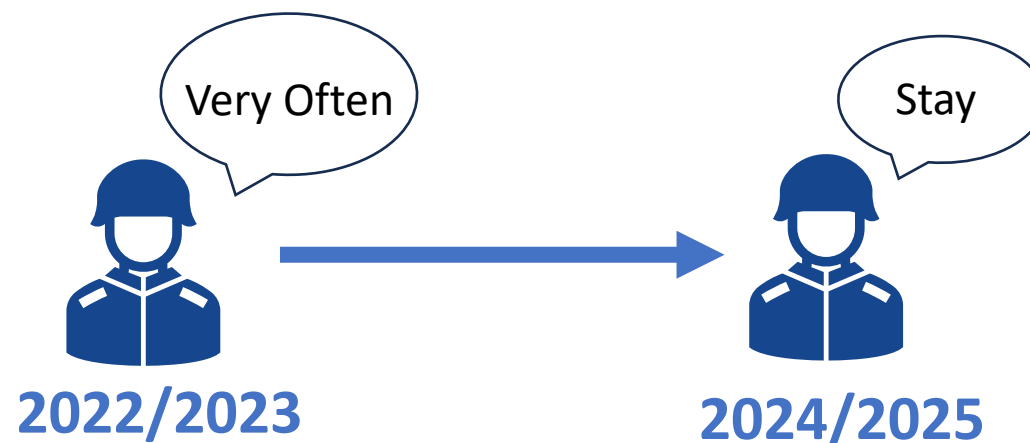
Note: These logistic regressions analyses controlled for adolescent age, sex, and service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



FINANCIAL HARDSHIP

PREDICTING SEPARATION FROM SERVICE

Since your child was born, how often has it been very hard to get by on your family's income, for example, it was hard to cover the basics like food or housing?



Service members were significantly **less likely** to separate from the military when they reported more frequent financial hardship during their child's lifetime.

Continuous	Baseline Predictor	Effect Size	95% CI	n
1= not at all to 4 = often	Financial hardship	0.824	0.692 – 0.982	1555

Note: These logistic regressions analyses controlled for adolescent age, sex, and service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



PREDICTORS OF ADOLESCENT MENTAL HEALTH PROBLEMS

A child suffering from significant depression or anxiety is a primary source of worry for a parent. This chronic stress can degrade a service member's own mental resilience, sleep, and focus.



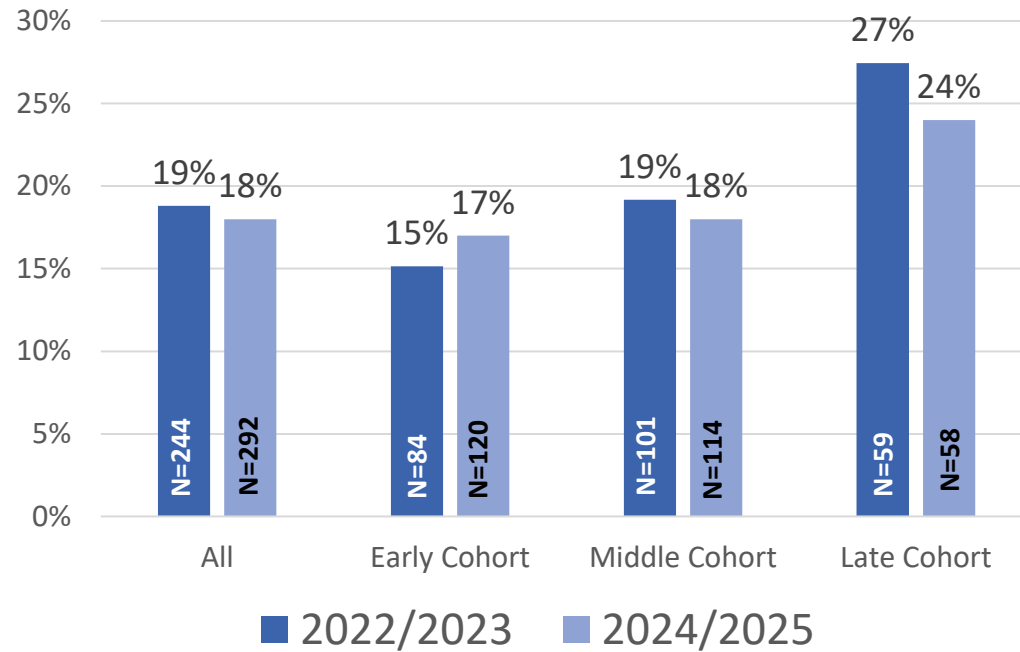


ADOLESCENT PROBABLE ANXIETY AND DEPRESSION

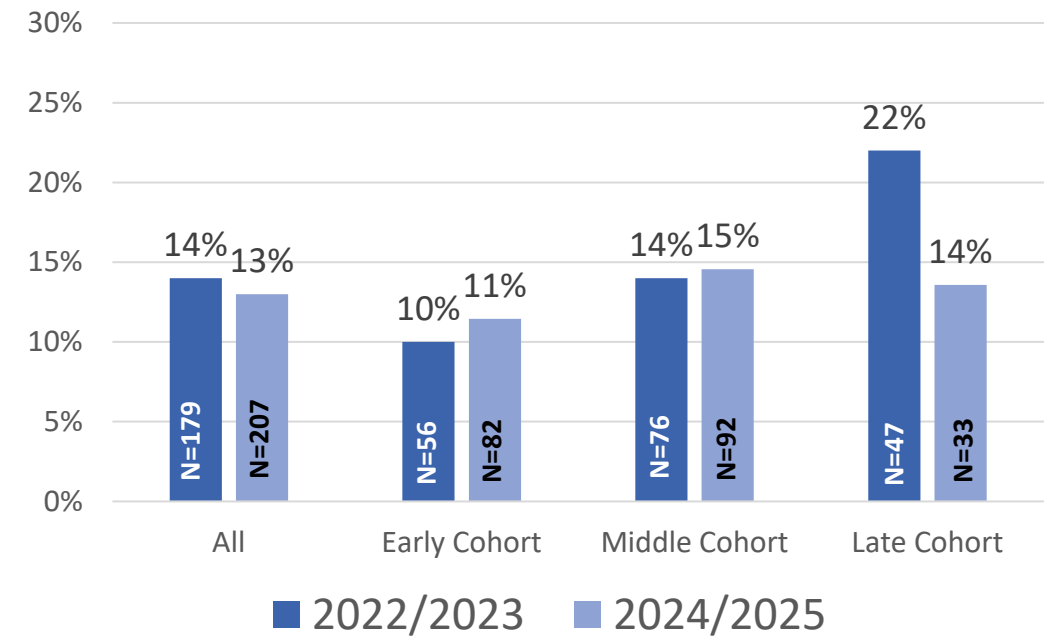
ADOLESCENT REPORT

Early cohort = 11-12 years at baseline
Middle cohort = 13-15 years at baseline
Late cohort = 16-17 years at baseline

Anxiety



Depression



Note: Probable anxiety affects roughly 10-15% and probable depression roughly 6-10% of adolescents in the US. Comparisons with national estimates should be interpreted cautiously because of differences in assessment and timing.

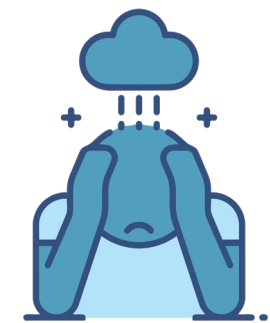


PARENT MENTAL HEALTH

PREDICTING ADOLESCENT MENTAL HEALTH

PARENT REPORT

Co-parent



2022/2023



2024/2025

If the non-service member parent was struggling with their own mental health in 2022/23, the odds of their adolescent experiencing mental health challenges two years later were nearly **87% higher**.

Reference Group	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
Negative screen for mental disorder	Co-parent Positive Screen Mental Disorder	1.868	1.222 – 2.857	609

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



FINANCIAL STRESS

PREDICTING ADOLESCENT MENTAL HEALTH

PARENT REPORT

Since your child was born, how often has it been very hard to get by on your family's income, for example, it was hard to cover the basics like food or housing?



2022/2023



2024/2025

For each step up in the frequency of reported financial hardship, the odds of an adolescent experiencing a negative mental health outcome two years later **increased by 47%.**

Continuous	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
1 = Never to 4 = Very often	Financial Stress Since Child was Born	1.469	1.002 – 2.154	963

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



SCHOOL ENVIRONMENT

PREDICTING ADOLESCENT MENTAL HEALTH

ADOLESCENT REPORT



Adolescents were significantly **less likely** to screen for depression and anxiety in 2024/2025 when they reported a positive school environment in 2022/2023.

Adolescents were significantly **more likely** to screen for depression or anxiety in 2024/2025 when they reported being bullied OR bullying in 2022/2023.

Continuous	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
Range 3-9	Positive School Environment	0.758	0.680 – 0.844	963
Range 0-3	Being Bullied	1.556	1.293 – 1.872	963
Range 0-3	Bullying	1.593	1.179 – 2.152	963

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



PARENT-CHILD RELATIONSHIP

PREDICTING ADOLESCENT MENTAL HEALTH

ADOLESCENT REPORT

Quality

- I enjoy doing things
- I share ideas and talk about things that matter
- I feel close

Communication

- I can tell my parent how I feel about things
- My parent listens to me
- I can talk to my parent about my problems



2022/2023

2024/2025

Adolescents were significantly **less likely** to screen for a mental health issue when they reported better communication and relationship quality with their parent at baseline.

Continuous	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
Range 3-9	Quality of Relationship	0.861	0.769 – 0.964	963
Range 3-9	Communication	0.866	0.786 – 0.953	961

Note: These logistic regressions analyses controlled for adolescent age, sex, **and baseline mental health**; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.
Note: Similar significant ORs were found when either the service member parent or the co-parent adolescent ratings were used as predictors of adolescent anxiety or depression.



CHANGING SCHOOLS AFTER PCS

PREDICTING ADOLESCENT MENTAL HEALTH

After you changed schools, how easy was it for you to...

- ✓ Fit in at your new school
- ✓ Make new friends at your new school
- ✗ Keep up with the schoolwork at your new school



Adolescents were significantly **less likely** to screen for depression and anxiety when they reported having an easy time changing schools after a PCS move.

Continuous	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
Range 1-3	Fit in at new school	0.675	0.522 – 0.873	802
Range 1-3	Make new friends	0.761	0.596 – 0.972	802

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



HEALTH BEHAVIORS

PREDICTING ADOLESCENT MENTAL HEALTH

ADOLESCENT REPORT



Adolescents were significantly **less likely** to screen for depression and anxiety when they reported more hours of sleep and more days of vigorous exercise at baseline.

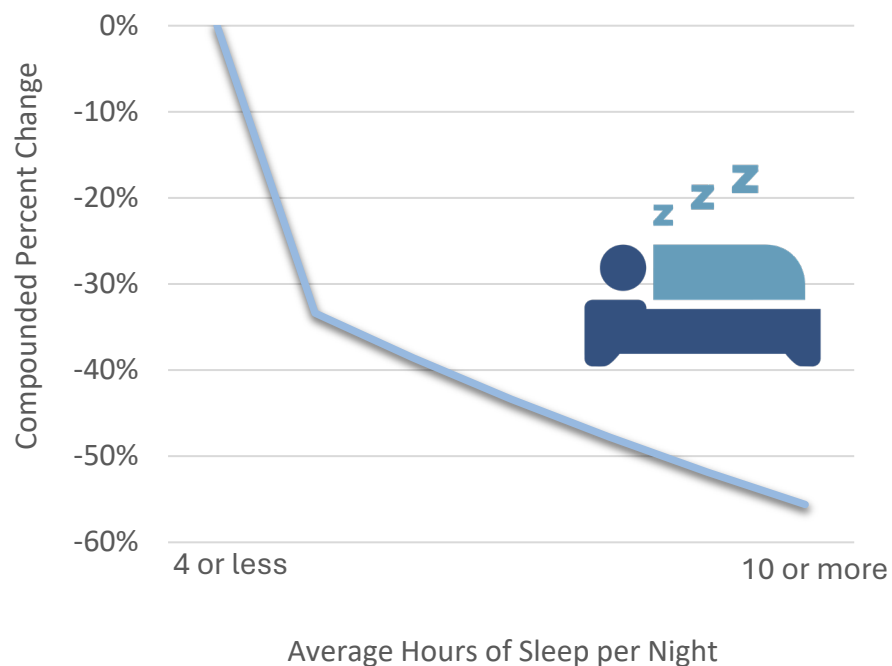
Continuous	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
Range 0-7 (4 or less – 10 or more)	Hours of Sleep	0.838	0.736 – 0.954	963
Range 0-7	Days of Exercise	0.916	0.851 – 0.986	957

Note: These logistic regressions analyses controlled for adolescent age, sex, and **baseline mental health**; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



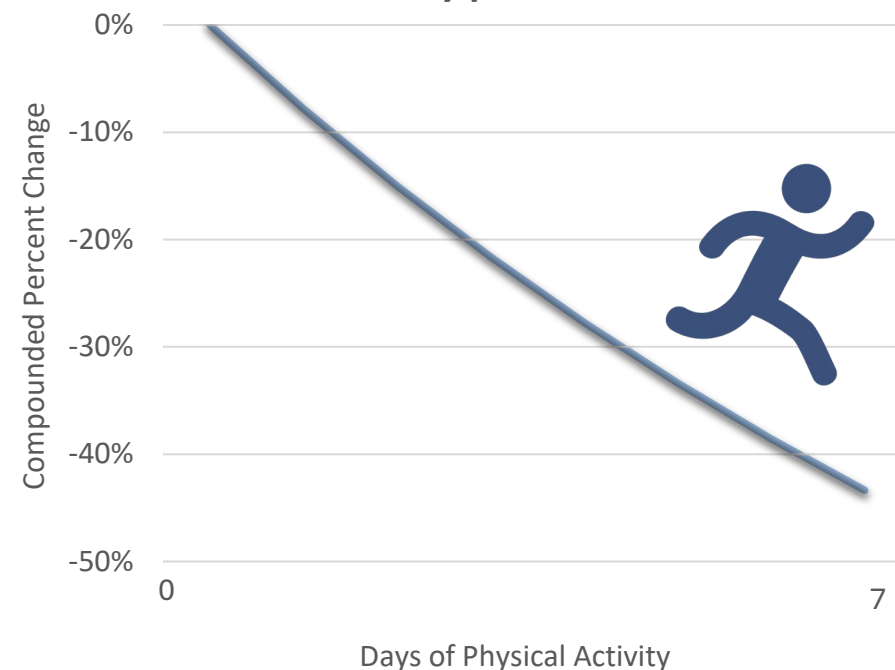
HEALTH BEHAVIORS

Cumulative Decrease in Odds of Probable Anxiety/Depression by Average Hours of Sleep per Night



Influence of cumulative average hours of sleep per night on mental health: Compounding adjusted odds of the average hours of sleep per night in relation to anxiety and depression at follow-up.

Cumulative Decrease in Odds of Probable Anxiety/Depression by Days of Physical Activity per Week



Influence of cumulative days of physical activity on mental health: Compounding adjusted odds of the days of physical activity in relation to anxiety and depression at follow-up.

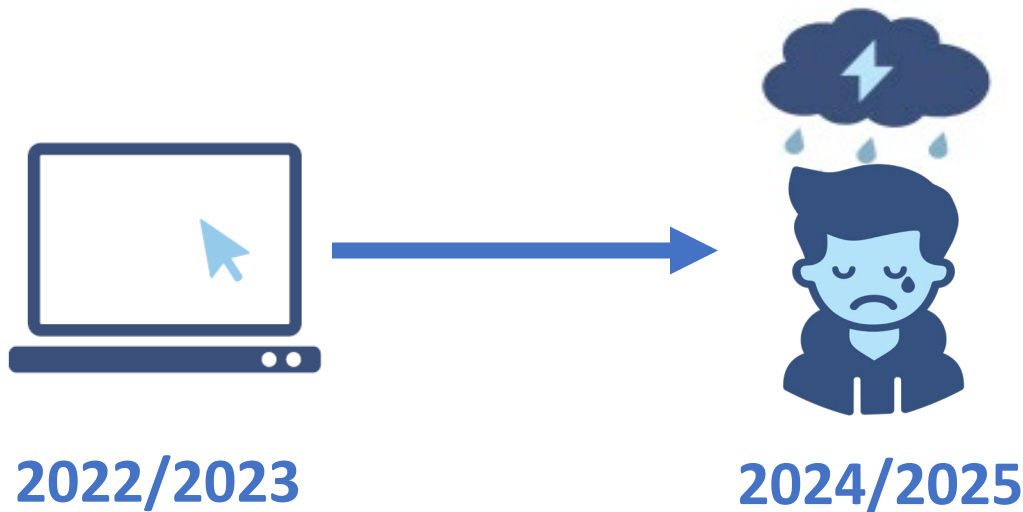


HEALTH BEHAVIORS

PREDICTING ADOLESCENT MENTAL HEALTH

ADOLESCENT REPORT

On an average day, how many hours do you spend in front of a TV, computer, smart phone, or other electronic device watching shows or videos, playing games, accessing the Internet, or using social media (also called "screen time")? (Do not count time spent doing schoolwork.)



For every additional hour of daily screen time an adolescent uses for entertainment, their odds of having anxiety or depression two years later increases by nearly 29%.

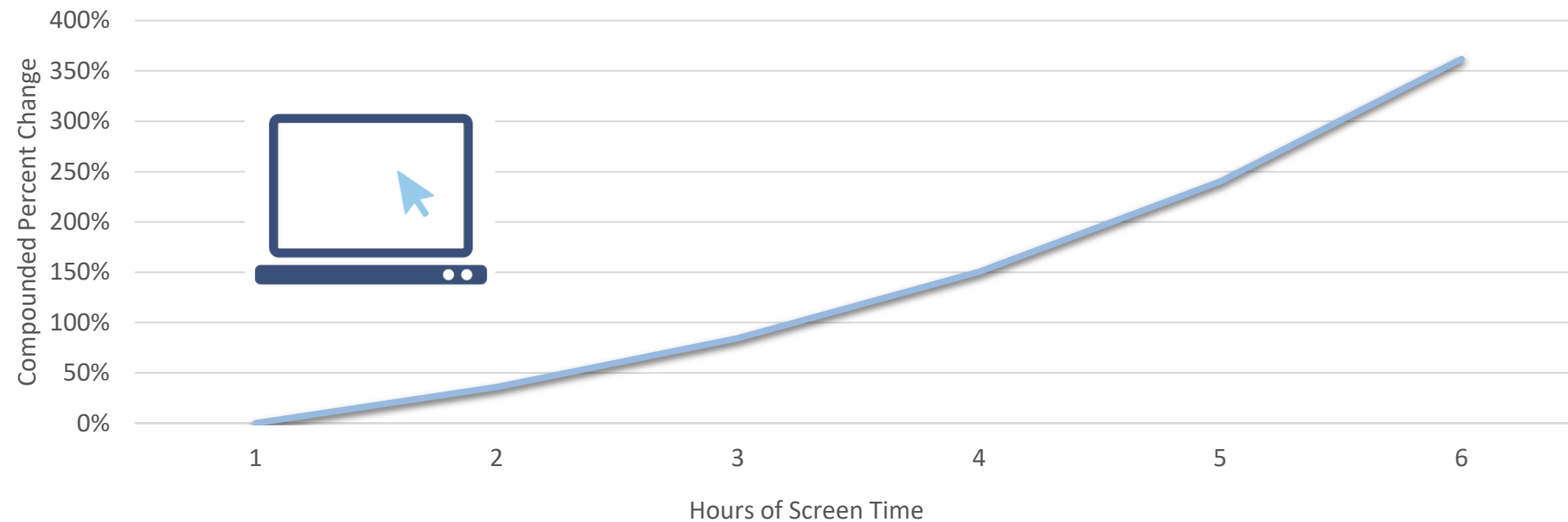
	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
Continuous Range 0-5	Screentime – Sedentary Behavior	1.286	1.144 – 1.446	962

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



HEALTH BEHAVIORS

Cumulative Increase in Odds of Probable Anxiety/Depression by Hours of Screen Time



Influence of cumulative hours of screen time on mental health: Compounding adjusted odds of the hours of screen time in relation to anxiety and depression at follow-up.



EXTRACURRICULAR ACTIVITIES

PREDICTING ADOLESCENT MENTAL HEALTH

PARENT REPORT



2022/2023



2024/2025

Adolescents were significantly **less likely** to screen for depression or anxiety when parents reported they attended health and wellness or sports programs in 2022/2023.

Reference	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
No	Health and Wellness	0.791	0.663 – 0.944	963
No	Sports	0.829	0.720 – 0.954	962

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.



SUPPORT RESOURCES

PREDICTING ADOLESCENT MENTAL HEALTH

PARENT REPORT

During the last 12 months, have you used any of the following sources of support to help your family?

religious or spiritual leaders



2022/2023



2024/2025

When a parent reported seeking support from a religious or spiritual leader, the odds of their adolescent having anxiety or depression a year or two later **were about 30% lower** compared to teens whose parents did not seek this type of support.

Reference	Baseline Predictor	Effect Size (Odds Ratio)	95% CI	n
No	Religious or Spiritual Leader	0.594	0.400 – 0.883	963

Note: These logistic regressions analyses controlled for adolescent age, sex, and baseline mental health; service member branch and paygrade. The predictor variables indicated by reference groups are separate models; the data are presented to show the controlled impact of these predictors irrespective of the presence of the other key predictor variables.

PREDICTING SCHOOL SOCIAL ADJUSTMENT AFTER A PCS MOVE

I'm making
friends and
fitting in!



I'm not.





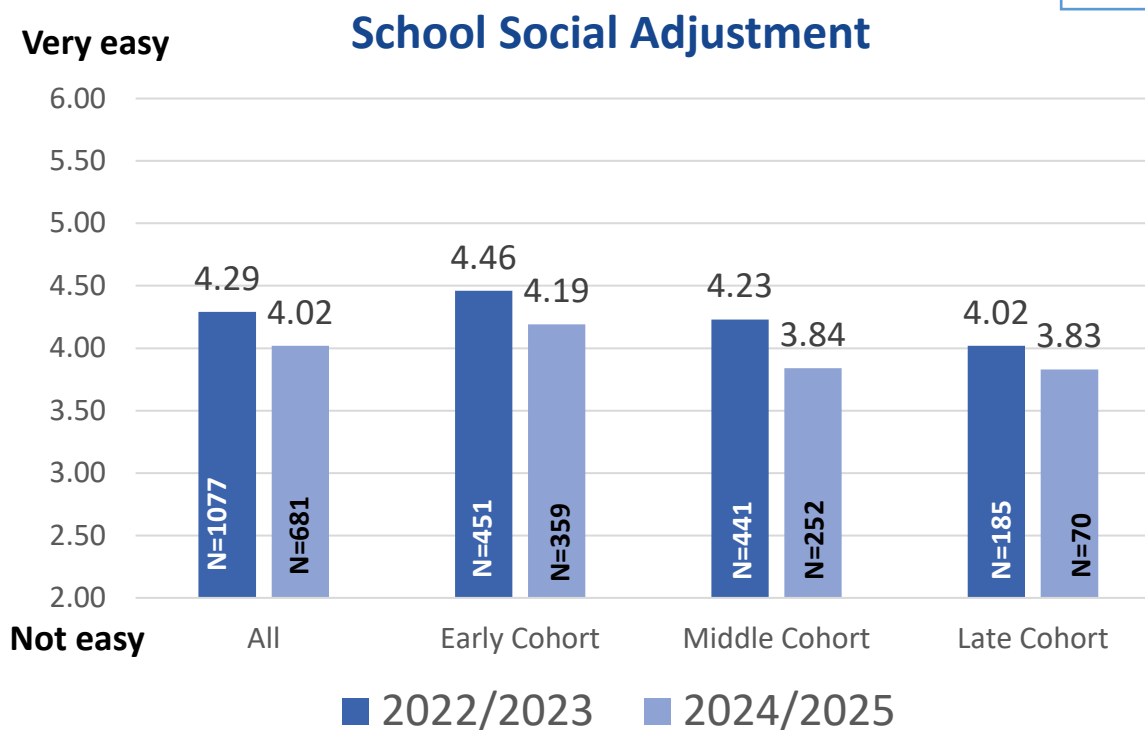
SCHOOL SOCIAL ADJUSTMENT

ADOLESCENT REPORT

Early cohort = 11-12 years at baseline
Middle cohort = 13-15 years at baseline
Late cohort = 16-17 years at baseline

After you changed schools, how easy was it for you to...

- Fit in at your new school
- Make new friends at your new school

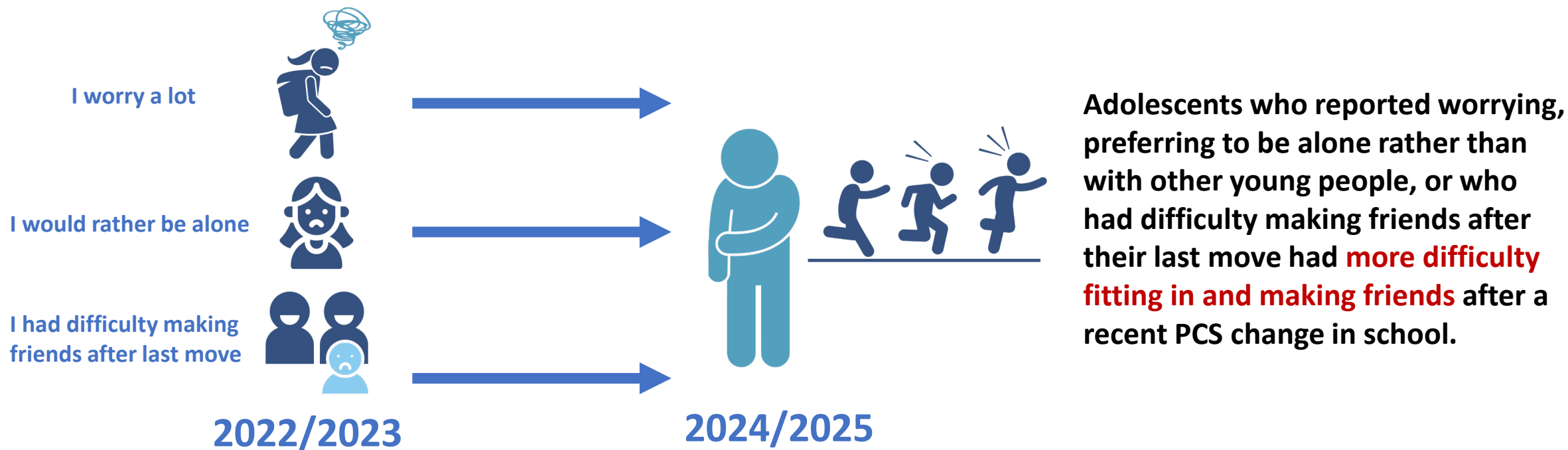


Note: School social adjustment is the average summed score of 2 items 1) fit in at new school and 2) make friends at your new school. Each item was rated on a 1 (not easy) to 3 (very easy) Likert scale.



PRE-EXISTING SOCIAL AND EMOTIONAL HEALTH

PREDICTING SCHOOL SOCIAL ADJUSTMENT



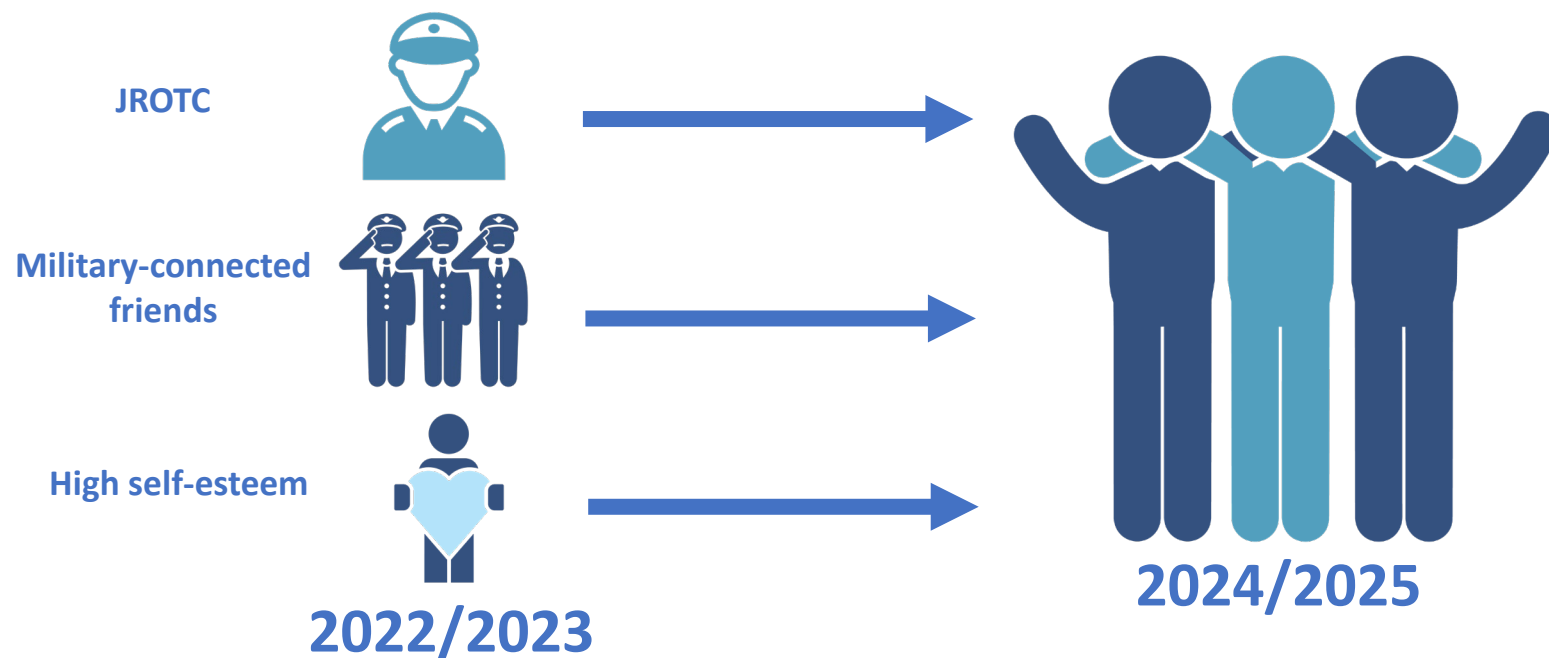
Continuous	Baseline Predictor	Standardized Beta	P-value	n
0= not true to 2 = certainly true	I worry a lot	-0.35	0.0003	403
0= not true to 2 = certainly true	I would rather be alone than with people my own age	-0.25	0.009	403
0 = very easy to 3 = not easy	Making friends at new school	0.30	0.03	403

Note: The target population is exclusively Active-Duty families where the adolescent experienced a Permanent Change of Station (PCS) move between Wave 1 and Wave 2 of the study (N = ~766). School Social Adjustment is a combined score measuring how well the adolescent fit in and made friends at their new school post-PCS. All models are separate and controlled for adolescent age, sex, mental health, service member rank, and branch.



PRE-EXISTING SOCIAL AND EMOTIONAL HEALTH

PREDICTING SCHOOL SOCIAL ADJUSTMENT



An adolescent's connection to a military peer group before a move is a powerful predictor of their social success after a move.

While external factors like peer groups are important, self-esteem is also a key protective factor.

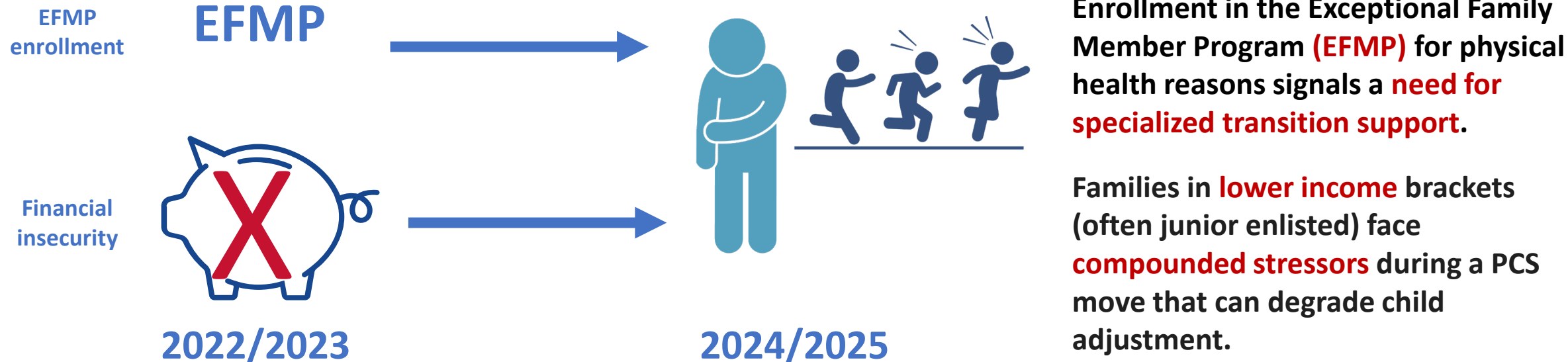
Response set	Baseline Predictor	Standardized Beta	P-value	n
No/yes	Are you enrolled in JROTC	0.959	0.037	97
No/yes	Are you friends with other kids from military families	0.582	0.001	407
1 = Not true to 3 = Often true	Combined score (3 items) Self-esteem	0.083	0.033	376

Note: The target population is exclusively Active-Duty families where the adolescent experienced a Permanent Change of Station (PCS) move between Wave 1 and Wave 2 of the study (N = ~766). School Social Adjustment is a combined score measuring how well the adolescent fit in and made friends at their new school post-PCS. All models are separate and controlled for adolescent age, sex, mental health, service member rank, and branch.



PARENT AND FAMILY ENVIRONMENT

PREDICTING SCHOOL SOCIAL ADJUSTMENT



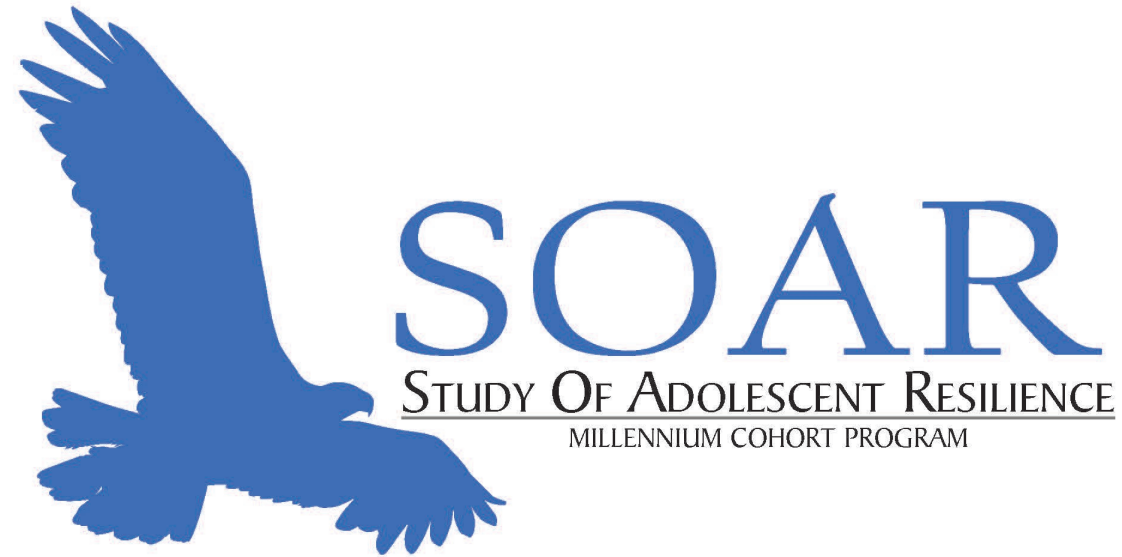
Response set	Baseline Predictor	Standardized Beta	P-value	n
Yes/No	Is your child currently enrolled in the EFMP?	-0.390	0.026	340
1 = Never to 4 = Very often	How often has it been very hard to get by on income?	-0.2507	0.001	407

Note: The target population is exclusively Active-Duty families where the adolescent experienced a Permanent Change of Station (PCS) move between Wave 1 and Wave 2 of the study (N = ~766). School Social Adjustment is a combined score measuring how well the adolescent fit in and made friends at their new school post-PCS. All models are separate and controlled for adolescent age, sex, mental health, service member rank, and branch.



DATA DRIVEN RECOMMENDATIONS

- **Prioritize Family Readiness as Military Readiness:** Integrate adolescent and family well-being metrics into broader retention and readiness strategies.
- **Strengthen PCS Transition Support:** Expand peer-to-peer youth sponsorship and targeted support for EFMP during school moves.
- **Address the Financial-Well-being Link:** Advocate for holistic support that recognizes the direct impact of financial hardship on adolescent anxiety and depression, as well as a child's ability to socially adjust after a PCS move.
- **Invest in Community & Protective Factors:** Continue championing accessible extracurriculars and positive school experiences by investing in military youth centers and programs.



STAY IN TOUCH

Naval Health Research Center
DoW Center for Deployment Health Research
<https://militarysoar.org/>