

The correlation matrix for prevalence, severity and complexity matrices.

	Prevalence	Severity	Complexity
Prevalence	1.00	0.47	-0.02
Severity	0.47	1.00	-0.01
Complexity	-0.02	-0.01	1.00

Prevalence and Severity. The correlation between prevalence and severity is 0.47, which suggests a moderate positive relationship. This moderate correlation implies that while there is some overlap between the prevalence and severity scores, it is not strong enough to suggest redundancy, thereby supporting their distinctiveness to some degree.

Prevalence and Complexity. The correlation coefficient of -0.02 suggests there is almost no linear relationship between these two variables, indicating that the prevalence of conditions does not significantly impact their complexity.

Severity and Complexity. The correlation coefficient of -0.01 also indicates almost no linear relationship between severity and complexity, suggesting they measure different aspects of conditions.

The correlation matrix demonstrates the relationships between these variables. Next, to further illustrate the divergent validity, we conducted a factor analysis as follows:

Loadings	MR1	MR2	MR3
Prevalence	0.53	0.24	0.21
Severity	0.41	0.49	0.05
Complexity	0.16	-	0.87

Prevalence shows a higher loading on MR1 (0.53), indicating its primary association with MR1, with moderate loadings on MR2 (0.24) and MR3 (0.21), suggesting weaker relationships with these factors.

Severity demonstrates balanced loadings on both MR1 (0.41) and MR2 (0.49), indicating its association with both factors, while its loading on MR3 (0.05) is lower, indicating a weaker relationship with this factor.

Complexity exhibits a high loading on MR3 (0.87), highlighting its primary association with MR3, along with a moderate loading on MR1 (0.16) and negligible loading on MR2, suggesting weaker relationships with these factors.

Conclusion. These results support the construct validity of MRN because:

- **Moderate Correlation:** The moderate correlation (0.47) between prevalence and severity is expected, as severe conditions may often be more prevalent in ICU contexts. However, this correlation is not strong enough to suggest redundancy.
- **Independence:** The near-zero correlations of complexity with prevalence and severity (-0.02 and -0.01, respectively) strongly support the independence of the complexity construct.
- **Factor Distinctiveness:** Prevalence primarily loads on MR1, severity loads on both MR1 and MR2, and complexity primarily loads on MR3. This distinct loading pattern supports the notion that these variables represent unique constructs.

Overall, the standardized results support that prevalence, severity, and complexity are independent constructs, with factor analysis further reflecting the relationships between these variables.