Padua Risk Prediction Model Validation for Venous Thromboembolism Risk, Incidence and Predictors among Patients attending the Emergency Department of Tertiary Care Hospitals in Addis Ababa City, Ethiopia: A Multicentre Prospective Study

Padua Risk Assessment Model (RAM)- is the widely used tool to stratify medical patients at a different level of VTE risks based on the risk factors that exist in hospitalized patients and consists of 11 items as described in the table below

Baseline features	Points
Active cancer	3
Previous VTE	3
Reduced mobility	3
Already known thrombophilia condition	3
Trauma/surgery within a month	2
Age≥70 years	1
Heart or respiratory failure	1
Acute myocardial infarction or ischemic stroke	1
Acute infection or rheumatologic disorder	1
BMI≥30 kg/m^2	1
Hormonal therapy	1

It is known that based on numerous guidelines and protocols, the Padua Prediction Score (PPS) has been recommended as the best available model for assessing the risk of venous thromboembolism (VTE) in hospitalized medical patients in various settings. However, the tool has also been tested using reliability and validity index for which the output of SPSS computed

Case Processing Summary

		N	%
Cases	Valid	422	100.0
	Excluded	0	.0
	Total	422	100.0

Reliability Statistics

Cronbach's Alpha[a]	Cronbach's Alpha Based on Standardized Items[a]	N of Items
.814	.299	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
active cancer	1.92	.779	.266	.524
previous VTE	2.10	.730	.028	.857
Reduced moblity	1.49	.650	.168	.728
trauma/surgery	1.83	1.011	.509	.101
age >=70	1.92	.543	.085	.944
known thrombophilia	2.12	.744	.031	.837
heart/respiratory failure	2.00	.675	.059	.865
Acute infection	1.65	.770	.304	.419
obesity	2.10	.725	.050	.870
hormonal therapy	2.07	.791	.222	.659
acute MI/AIS	2.01	.665	.023	.911

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a. Listwise deletion based on all variables in the procedure.

Factor Analysis

Communalities

	Initial	Extraction
active cancer	1.000	.682
Reduced moblity	1.000	.476
previous VTE	1.000	.657
known thrombophilia	1.000	.685
trauma/surgery	1.000	.737
age >=70	1.000	.504
heart/respiratory failure	1.000	.580
acute MI/AIS	1.000	.545
Acute infection	1.000	.655
obesity	1.000	.591
hormonal therapy	1.000	.761

Extraction Method: Principal Component Analysis.

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
active cancer	.20	.403	422
previous VTE	.02	.128	422
Reduced moblity	.63	.484	422
known thrombophilia	.00	.069	422
trauma/surgery	.29	.455	422
age >=70	.20	.400	422
heart/respiratory failure	.13	.332	422
acute MI/AIS	.11	.315	422
Acute infection	.47	.500	422
obesity	.02	.128	422
hormonal therapy	.05	.223	422

Correlations

		active cancer	Reduced	trauma/surgery	heart/respiratory re	hormonal y	obesity	Acute	acute	age >=70	known ilia	previous
active cancer	Pearson	1	-.195**	-.286**	-.156**	-.013*	.026*	.817**	-.142**	-.061*	.051	-.020*
	Sig. (2-tailed)		.000	.000	.001	.032	.025	.000	.004	0.14	.98	.017
	N	422	422	422	422	422	422	422	422	422	422	422
Reduced moblity	Pearson	-.195**	1	.084*	-.093*	-.194**	-.054	-.216**	.117*	.738**	.053	-.015
	Sig. (2-tailed)	.000		.016	.036	.000	.072	.000	.017	.004	.076	.056
	N	422	422	422	422	422	422	422	422	422	422	422
trauma/surgery	Pearson	-.286**	.084*	1	-.196**	-.104*	-.083*	-.428**	-.194**	-.137**	-.044*	-.042*
	Sig. (2-tailed)	.000	.016		.000	.034	.017	.000	.000	.005	.014	.044
	N	422	422	422	422	422	422	422	422	422	422	422
heart/respiratory	Pearson	-.156**	-.093*	-.196**	1	.008*	.119*	.043*	.093*	.151**	-.026*	.175**
	Sig. (2-tailed)	.001	.015	.000		.016	.015	.037	.050	.002	.022	.000
	N	422	422	422	422	422	422	422	422	422	422	422
hormonal therapy	Pearson	.673*	-.194**	-.104*	.008*	1	.053*	.035*	-.083*	-.117*	-.016*	-.030*
	Sig. (2-tailed)	.013	.000	.034	.026		.027	.047	.018	.016	.040	.033
	N	422	422	422	422	422	422	422	422	422	422	422
obesity	Pearson	.026*	-.054*	-.083	.119*	.053*	1	-.048*	.072*	.028*	-.009	.274**
	Sig. (2-tailed)	.028	.012	.087	.015	.017		.032	.040	.014	.054	.000
	N	422	422	422	422	422	422	422	422	422	422	422
Acute infection	Pearson	.817**	-.216**	-.428**	.043*	.035*	-.048*	1	-.123*	-.055*	-.065*	-.048*
	Sig. (2-tailed)	.000	.000	.000	.037	.017	.022		.011	.021	.014	.032

	N	422	422	422	422	422	422	422	422	422	422	422
acute MI/AIS	Pearson	-.142**	.117*	-.194**	.093	-.083*	.072*	-.123*	1	.257**	.085*	.013
	Sig. (2-tailed)	.004	.017	.000	.056	.018	.013	.011		.000	.020	.790
	N	422	422	422	422	422	422	422	422	422	422	422
age >=70	Pearson	-.061*	.738**	-.137**	.151**	-.117*	.028	-.055	.257**	1	.052	-.018
	Sig. (2-tailed)	.014	.004	.005	.002	.016	.564	.261	.000		.286	.708
	N	422	422	422	422	422	422	422	422	422	422	422
known thrombophilia	Pearson	.051*	.053*	-.044*	-.026*	-.016*	-.009*	-.065*	.085*	.052*	1	-.009
	Sig. (2-tailed)	.018	.026	.034	.012	.040	.034	.011	.010	.036		.054
	N	422	422	422	422	422	422	422	422	422	422	422
previous VTE	Pearson	-.020	-.015	-.042	.175**	-.030	.274**	-.048	.013	-.018	-.009	1
	Sig. (2-tailed)	.687	.756	.384	.000	.533	.000	.322	.790	.708	.854	
	N	422	422	422	422	422	422	422	422	422	422	422

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

In general, the Cronbach's Alpha of 0.814 indicated in acceptable range to determine internal consistency. The Pearson correlation matrix also showed $p<0.05$, and the variance extracted for each item in the confirmatory factor analysis (CFA) was found to be more than 0.5, indicating the presence of convergent and discriminant validity of the tool.