

Predictive validity of workplace-based assessments in an integrated multidisciplinary context for undergraduate medical students .

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Aim To assess the predictive validity of workplace-e based assessments in an integrated multidisciplinary context for undergraduate medical students., specifically to assess the relationship between the different workplace-based assessments (WBA) (mini CEX, case-based discussion (CBD) and Observed long case (OLC)) and the integrated end of year exam performance and to identify which of those components better predicts the students’ final performance

Methodology: A retrospective cross-sectional analysis of student performance in WBA was conducted in the senior clerkship of the medical program for those students who completed the end of senior clerkship examination in 2017, 2018 and 2019. There were three blocks each of 13 weeks duration (Medicine and allied, Surgery and allied , Women and Child) with different WBA. The hard copy evaluation forms of the all the assessments (mini CEX, CBD, OLC) completed during their rotation of the block was gathered and the data was recoded in SPSS 23 for analysis. Where there was more than one of the same type of WBA in the same block, the mean score was used for the final analysis. The relationship was investigated between the WBA of each type and the end of senior clerkship examination. Each block had a separate exam at the end of the year consisting of a written paper of 100 questions and a clinical encounter examination consisting of 12 stations..

Results: Workplace-based assessments of 330 students who did Medicine & allied, Surgery &allied and Women and Child blocks were studied. In medicine block, none of the WBA correlated positively with the overall end of year exam performance, written or clinical component. However, the case-based discussion performed a little better than mini-CEX (Pearson correlation .0.149). In the surgery block, the observation was similar and the mini CEX correlated positively with the student performance of the clinical component of the end of year exam (correlation 0.202 for mini CEX and 0.108 for cased-based discussion). In the women and Child block all mini CEX, case-based discussion, and observed long case showed a positive correlation (0.125, 0.209, and 0.091, respectively) with the end of year examination. Conclusion: Though Mini CEX, CBD and OLC have been used as valid assessment tools for the intended outcomes of the curriculum, using discipline-based WBA in an integrated setup and trying to correlate the results with the end-of-year integrated exam of many specialties, it does not seem to reflect . In Women child health block the results correlated significantly positively and this may be because of the predominant component of OBGYN in both WBA and end-of-block assessme

Women & Child Health CORRELATIONS								
		W CH Minicex (Average)	W CH CBD (Average)	OBG OLC	WCH IHA	W CH Written Final	WCH Clinical Final	WCH Block Final
W CH Minicex (Average)	Pearson Correlation	1	.118	.174**	.550**	.196**	.125	.188**
	Sig. (2-tailed)		.041	.002	.000	.000	.025	.001
	N	317	302	313	317	317	317	317
W CH CBD (Average)	Pearson Correlation	.118	1	.069	.446**	.148**	.209**	.215**
	Sig. (2-tailed)	.041		.228	.000	.009	.000	.000
	N	302	315	311	315	315	315	315
OBG OLC	Pearson Correlation	.174**	.069	1	.538**	.154**	.091	.143**
	Sig. (2-tailed)	.002	.228		.000	.005	.101	.010
	N	313	311	326	326	326	326	326
WCH IHA	Pearson Correlation	.550**	.446**	.538**	1	.470**	.414**	.522**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	317	315	326	331	331	331	331
W CH Written Final	Pearson Correlation	.196**	.148**	.154**	.470**	1	.425**	.826**
	Sig. (2-tailed)	.000	.009	.005	.000		.000	.000
	N	317	315	326	331	331	331	331
WCH Clinical Final	Pearson Correlation	.125	.209**	.091	.414**	.425**	1	.861**
	Sig. (2-tailed)	.025	.000	.101	.000	.000		.000
	N	317	315	326	331	331	331	331
WCH Block Final	Pearson Correlation	.188**	.215**	.143**	.522**	.826**	.861**	1
	Sig. (2-tailed)	.001	.000	.010	.000	.000	.000	
	N	317	315	326	331	331	331	331

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

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

CORRELATIONS MEDICINE BLOCK								
		Average minicex Medicine	Medicine CBD Average	OLC Medicine (Average)	Med InHouse assessment	Medicine Block Written Final	Medicine Block Clinical Final	Medicine Block Final
Average minicex Medicine	Pearson Correlation	1	.023	.333**	.188**	.072	-.013	.046
	Sig. (2-tailed)		.689	.000	.001	.202	.817	.410
	N	319	297	319	318	318	318	318
Medicine CBD Average	Pearson Correlation	.023	1	.122*	.176**	.056	.149**	.126*
	Sig. (2-tailed)	.689		.033	.002	.333	.009	.028
	N	297	306	306	305	305	305	305
OLC Medicine (Average)	Pearson Correlation	.333**	.122*	1	.159**	.044	-.152**	-.053
	Sig. (2-tailed)	.000	.033		.004	.429	.006	.339
	N	319	306	329	328	328	328	328
Med InHouse assessment	Pearson Correlation	.188**	.176**	.159**	1	.052	.256**	.180**
	Sig. (2-tailed)	.001	.002	.004		.349	.000	.001
	N	318	305	328	330	330	330	330
Medicine Block Written Final	Pearson Correlation	.072	.056	.044	.052	1	.163**	.839**
	Sig. (2-tailed)	.202	.333	.429	.349		.003	.000
	N	318	305	328	330	330	330	330
Medicine Block Clinical Final	Pearson Correlation	-.013	.149**	-.152**	.256**	.163**	1	.673**
	Sig. (2-tailed)	.817	.009	.006	.000	.003		.000
	N	318	305	328	330	330	330	330
Medicine Block Final	Pearson Correlation	.046	.126*	-.053	.180**	.839**	.673**	1
	Sig. (2-tailed)	.410	.028	.339	.001	.000	.000	
	N	318	305	328	330	330	330	330

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

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

		Surgery Minicex (Average)	Surgery CBD (Average)	SURG IHA	SURG Block Written Final	SURG block clinical	SURG Block Final (Written+OSCE)
Surgery Minicex (Average)	Pearson Correlation	1	.197	.562**	-.032	.202*	.108
	Sig. (2-tailed)		.264	.000	.754	.043	.286
	N	100	34	100	100	100	100
Surgery CBD (Average)	Pearson Correlation	.197	1	-.079	-.048	.108	.023
	Sig. (2-tailed)	.264		.226	.465	.098	.726
	N	34	237	237	237	237	237
SURG IHA	Pearson Correlation	.562**	-.079	1	.109*	-.260**	-.067
	Sig. (2-tailed)	.000	.226		.048	.000	.221
	N	100	237	331	331	331	331
SURG Block Written Final	Pearson Correlation	-.032	-.048	.109*	1	.383**	.868**
	Sig. (2-tailed)	.754	.465	.048		.000	.000
	N	100	237	331	331	331	331
SURG block clinical	Pearson Correlation	.202*	.108	-.260**	.383**	1	.790**
	Sig. (2-tailed)	.043	.098	.000	.000		.000
	N	100	237	331	331	331	331
SURG Block Final (Written+OSCE)	Pearson Correlation	.108	.023	-.067	.868**	.790**	1
	Sig. (2-tailed)	.286	.726	.221	.000	.000	
	N	100	237	331	331	331	331

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

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