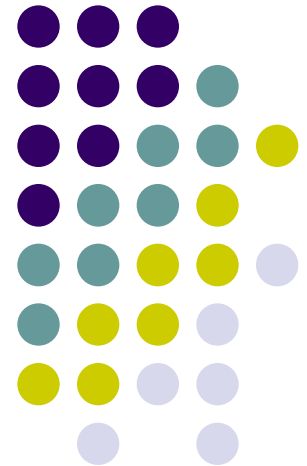


The Functional Intraoral Glasgow Scale (FIGS) as a practical measure of speech and swallowing in HNC

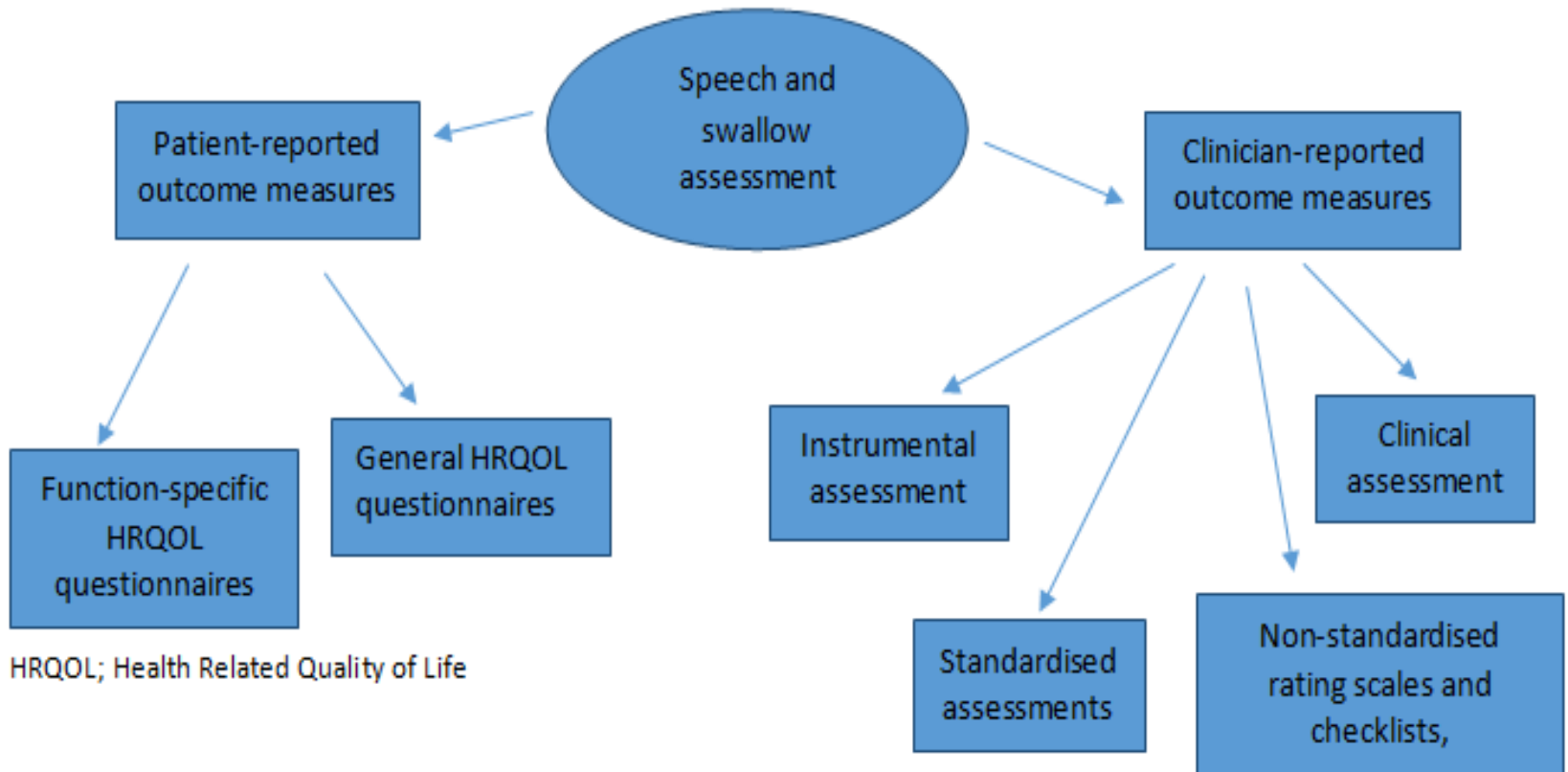
REC reference: 13/WS/0186

IRAS project ID: 119535

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Outcome measures dichotomised as PROMs and CROMs



Outcome measurement



- Speech and swallowing difficulties are a well-documented outcome of HNC and its treatment (Hutcheson and Lewin 2013; Kanatas et al. 2013; Stier-Jarmer et al. 2014)
- Measurement of treatment outcomes is considered an integral part of quality healthcare provision (National Institute for Clinical Excellence 2004; Laraway and Rogers 2012)
- Calls have been made for a comprehensive approach to speech and swallowing outcome measurement that takes account of both the clinician's and the patient's perspective (Jacobi et al. 2010; Kraaijenga et al. 2014; Mlynarek et al. 2008)

Functional Intraoral Glasgow Scale (FIGS)



- Devised at the Canniesburn Unit (Nicoletti, et al. 2004)
- Short 3-item scales – Chew, Swallow, Speech.
- Completed by patients - PROM
- 5-point Likert scale scoring



the FIGS

I can chew...

Any food, no difficulty	5
Solid food with difficulty	4
Semisolid food, no difficulty	3
Semisolid food with difficulty	2
Cannot chew at all	1



the FIGS cont.

I can swallow ...

- Any food, no difficulty 5
- Solid food, with difficulty 4
- Semisolid food only 3
- Liquids only 2
- Cannot swallow at all 1



the FIGS cont ...

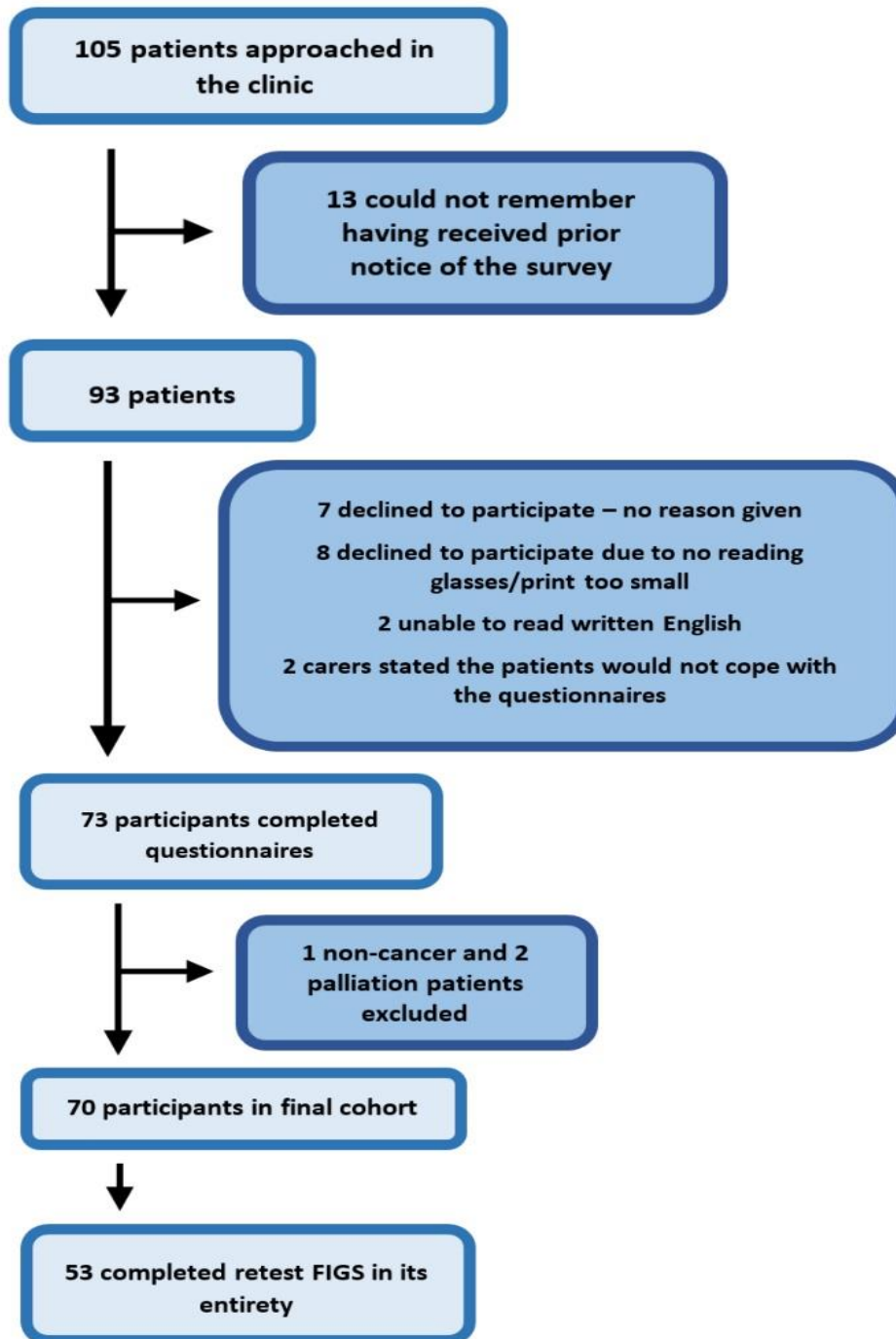
My speech is ...

- Clearly understood always 5
- Requires repetition sometimes 4
- Requires repetition many times 3
- Understood only by relatives 2
- Unintelligible 1

Aims of the project



- Test-retest reliability?
- Validity?
 - comparison the M.D. Anderson Dysphagia Inventory (MDADI) (Chen et al. 2001)
 - comparison with the Speech Handicap Index (SHI) (Rinkel et al. 2008)
- Describe/outline the speech and swallowing difficulties experienced by HNC patients in the West of Scotland.

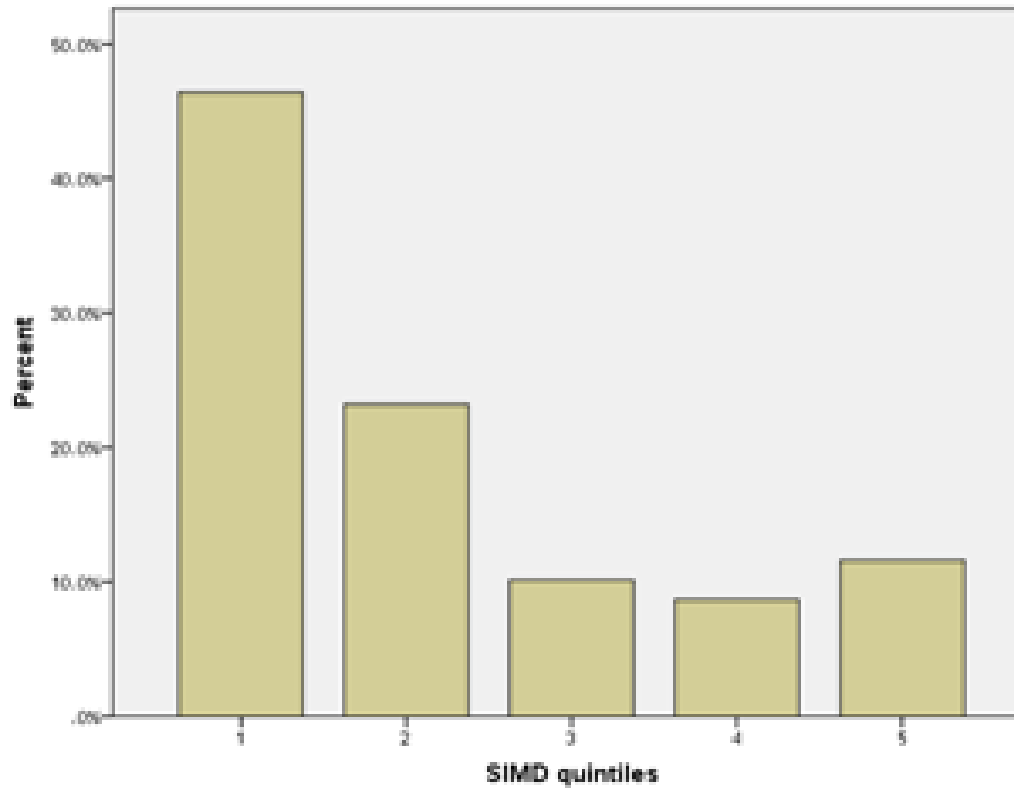




Variables	Number	Percent
Male	45	64.3
Female	25	35.7
Total	70	100
Oral cavity	26	37.1
Oropharynx	14	20
Larynx	18	25.7
Hypopharynx	1	1.4
Other	9	12.9
More than 1 tumour site	2	2.9
Total	70	100
Stage 0 (CIS)	2	2.9
Stage I	11	15.7
Stage II	13	18.6
Stage III	9	12.9
Stage IV	27	38.6
Total	62	88.6
Missing values	8	11.4
Total	70	100
Surgery only	23	32.9
Radiotherapy only	10	14.3
Chemoradiotherapy only	8	11.4
Surgery plus (C)RT	28	40
Missing values	1	1.4
Total	70	100
Pre-treatment	1	1.4
Treatment ongoing	2	2.9
Post-treatment	67	95.7
Total	70	100



Figure 3. Scottish Index of Multiple Deprivation Quintiles





Test-retest reliability

- Comparison between FIGS given at timepoints 1 and 2.
- Assessed using the intra-class correlation coefficient (ICC) where '1' indicates highest degree of similarity and '0' indicates no similarity
- ICC scores were:-
chew = .902
swallow = .891
speech = .940, (95% confidence interval. Results were significant (p=0.001)).



Validity – Spearman's rho was used

	SHI total score	SHI global item	MDADI total score	MDADI global item
FIGS speech	- 0.845 (n=61)*	- 0.736 (n=66)*		
FIGS chew			0.512 (n=56)*	0.582 (n=64)*
FIGS swallow			0.595 (n=55)*	0.531 (n=63)*

*

statistically significant

- 0.00 indicates that there is no linear association at all
 - -1.00 or 1.00 indicates a perfect negative or positive association
- 0.6-1 > strong relationship,
0.3-0.59 > moderate to fairly strong relationship
0.15-0.3 > weak relationship (Walker and Almond, 2010)



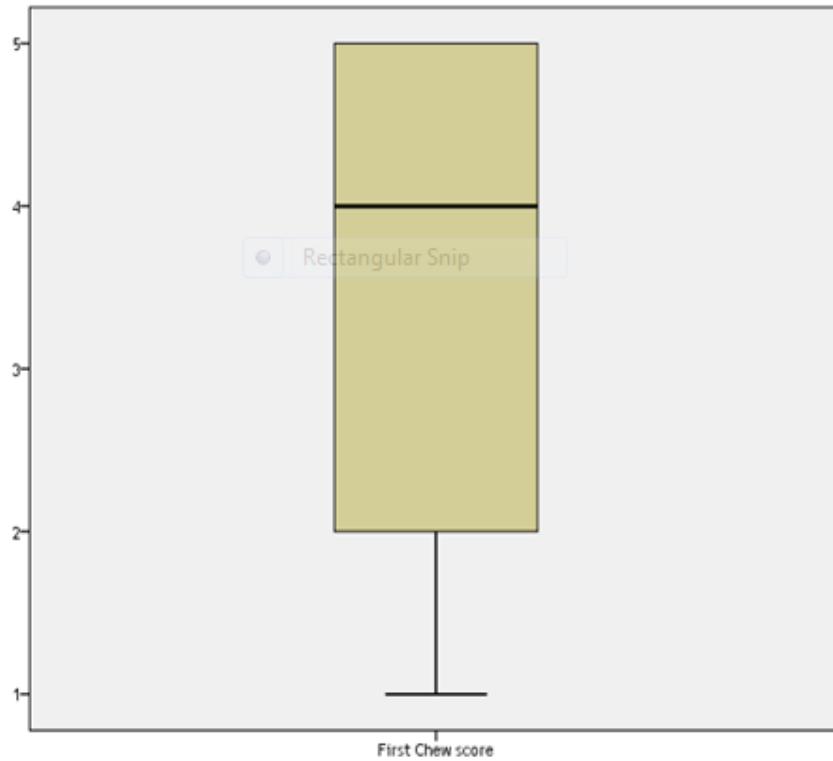
FIGS mean scores

	Number	Mean score	Standard Deviation	Median score	<u>Interquartile range</u>
Chew subscale	N=70	3.34	1.41	4	3
Swallow subscale	N=69	3.83	1.01	4	2
Speech subscale	N=70	3.96	0.97	4	1

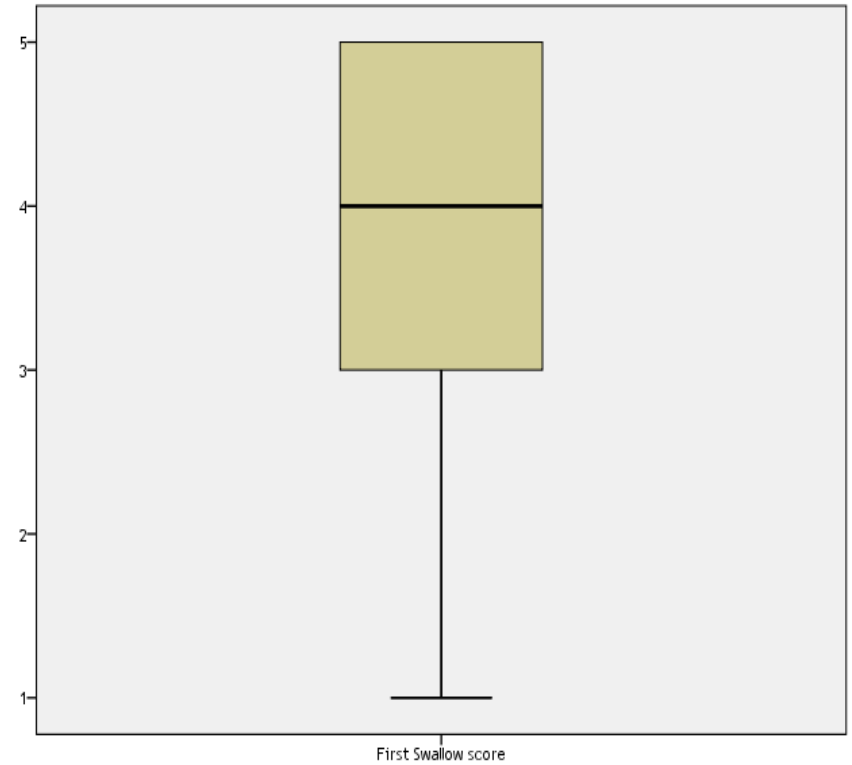
NB a score of 5 on each subscale indicates normal function and a score of 1 indicates very poor function.



FIGS chew score

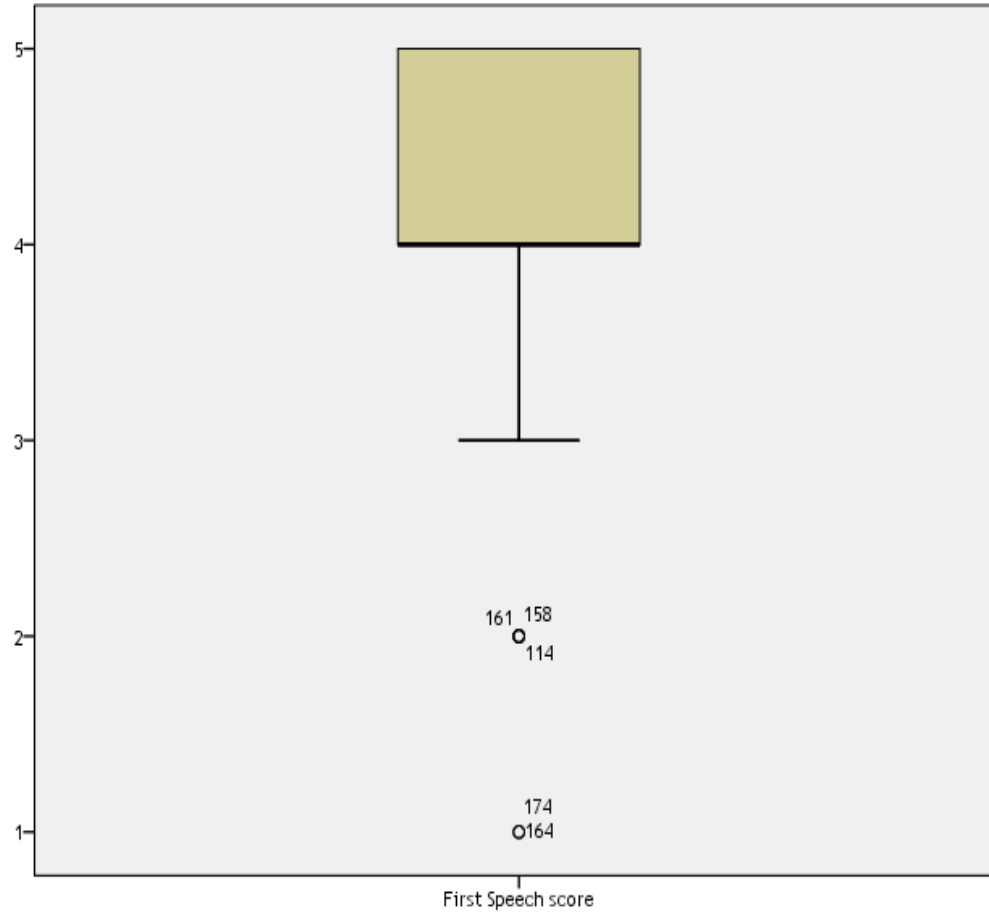


FIGS swallow score





FIGS speech score





Outlying Scores on the FIGS Speech scale

Participant no.	Tumour site	Tumour stage	treatment	Time point in treatment	SIMD quintile
12	larynx	Stage IV	Surgery and adjuvant (C)XRT	Post-treatment	1
52	larynx	Stage IV	Surgery and adjuvant (C)XRT	Post-treatment	1
64	Larynx	Stage III	Salvage surgery (Lx with prior XRT)	Post-treatment	1
70	More than 1 site (oral cavity and Lx)	Stage IV	Surgery and adj XRT with further surgery	Post-treatment	2
55	Oral cavity	Stage II	Surgery and adjuvant (C)XRT	Post-treatment	1



OM completion rates

- FIGS – 69/70 (99%)
 - SHI - 54/70 (77%)
 - MDADI - 56/70 (80%)
-
- ?high pt burden – pts prefer a short questionnaire of less than twenty items (Mehanna and Morton, 2006)

Strengths ...

- Simplicity and brevity
- Low patient-burden/pt acceptability
- Generally contains only plain, everyday language
- Does not require numerical interpretation or summing of scores
- It uses an 'overall'/global score approach
- Reliable
- Valid

and weaknesses

- Doesn't give detailed information about function
- Originally developed through expert opinion only
- Uses "unintelligible" in the speech scale
- No scale for 'voice'



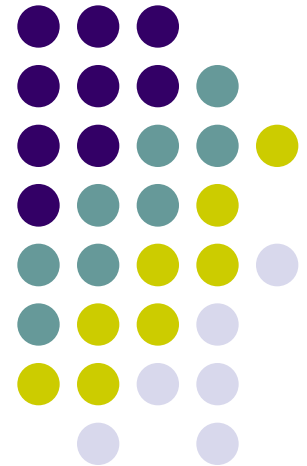
Key points



- All OMs have strengths and weaknesses
- No single OM will deliver all the speech and swallowing information that we desire – a range of measures is required
- Work continues to be done to develop a consensus on what that range of measures should look like
- The FIGS is a brief, plain-language, clinically useful PROM which can be administered and interpreted by all members of the MDT and can be interpreted easily by patients.
- The FIGS is worthy of further investigation and development
- The FIGS can make a valuable contribution to a selective battery of OMs for use with HNC across the UK.

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