Effects of web-based information on patient satisfaction and image quality in patients undergoing an ^{18}F-FDG PET/CT examination – a randomised controlled trial

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ABSTRACT

The aim was to investigate the effect of web-based patient information on patients' satisfaction with care during an ^{18}F-FDG PET/CT examination, their knowledge about the examination and the image quality, compared with standard care, and to explore the usage of and satisfaction with web-based information. **Methods:** One hundred-forty-eight patients were recruited between October 2015 and December 2016 and randomly assigned to Standard Care (SC) or an Intervention Group (IG). SC received information about the ^{18}F-FDG PET/CT examination according to standard care and IG also received access to web-based information about the examination. A questionnaire was used to evaluate patient satisfaction, knowledge and discomfort and a blinded image quality assessment was conducted. **Results:** The overall satisfaction was high in both IG and SC. The lowest satisfaction concerned the information about how the patients would receive the results about the PET/CT examination. More patients in IG than SC knew how the ^{18}F-FDG PET/CT examination was conducted. Descriptive data suggest that image quality was slightly better in IG than SC, but there were no statistically significant differences between the groups regarding any of the outcomes. The recruitment encountered several obstacles leading to an insufficient power to detect differences. Also, only 54 of 75 patients (72%) in IG used the web-based information. However, those who used the web-based information were satisfied and found it helpful. **Conclusion:** Effects of web-based information need to be investigated in a larger sample of patients. Improved information before an ^{18}F-FDG PET/CT examination may increase patient knowledge and help them to prepare and undergo the examination. It may also improve image quality. However, this needs to be investigated using image quality as the primary outcome. The results may be used to improve patient information and care and thereby optimise the ^{18}F-FDG PET/CT examination procedure.

Keywords

INTRODUCTION

PET/CT with the radioactively labelled glucose analog ^{18}F-FDG is used in oncology imaging and has proven valuable for diagnosis, staging and evaluating therapy response (*1-3*). Oncological patients who undergo an ^{18}F-FDG PET/CT examination may experience discomfort during time spent in the PET/CT scanner (*4*) or anxiety, before the procedure (*5*), and after the PET/CT examination due to fear of the results (*6*).

Patients increasingly seek information about planned imaging examinations on the internet. This may lead to misinformed patients due to incorrect web-sites (*7, 8*). However, web-based information developed by a Nuclear Medicine department may be one way to provide accurate information tailored to patients' needs and can be expected to be sought by more and more patients due to the increasing internet use. Patients who received a piece of web-based educational material about mammography had more positive perceptions and more intention to obtain mammography than patients who received information regarding the examination according to standard care (*9*). The value of web-based information in conjunction with PET/CT examinations has still not been explored.

The ^{18}F-FDG-PET/CT examination requires the patients to follow pre-examination instructions and instructions from the nursing staff during the examination to optimise tracer uptake in tumor tissue and reduce uptake in normal tissue (i.e., bladder, skeletal muscle, brown fat), and also keep patient radiation dose as low as possible. Tracer uptake in normal tissue makes it difficult to interpret the images and thereby may lead to a diagnostic delay of the cancer (*1*).

Our previous studies on oncology patients undergoing ^{18}F-FDG PET/CT (*4*) and ^{18}F-fluoride PET/CT examination (*10*) found that many patients did not know what a PET/CT examination

was prior to the examination. The majority were satisfied with the care provided, but there was room for improvement, especially with regard to the information before the examination and the communication during the examination (*4,10*). Thus, there is a need to improve the information about PET/CT examinations and thereby facilitate patients' understanding of the examination procedures, which in turn may improve image quality and the diagnostics of cancer.

The aim was to investigate what effect web-based patient information had on patients' satisfaction with care during an ^{18}F-FDG PET/CT examination, their knowledge about the examination and the image quality, compared with standard care, and to explore the usage of and the satisfaction with the web-based information.

MATERIALS AND METHODS

Patients

All patients who were referred to an ^{18}F-FDG-PET/CT examination with or without iodine contrast between October 2015 and December 2016 were assessed for eligibility. The inclusion criterion was a referral to a standard whole-body ^{18}F-FDG PET/CT examination due to known or suspected malignancy. Exclusion criterion were earlier PET/CT examinations' inability to communicate in Swedish, age <18 years or the ^{18}F-FDG PET/CT scheduled <5 days after the notice. In total 2275 patients were excluded and 75 patients could not be reached by phone (Figure 1). The most frequent reasons to decline participation was no accesses to the internet (n=97) or distress due to the cancer diseases (data not available). The study was approved by the ethics review board in Uppsala, Sweden (approval 2014/549 and 2014/549/1). All participants gave a written informed consent.

Power analysis and randomisation

The primary outcome was overall satisfaction, the sum of eight questions regarding patient satisfaction used in our previous study (*4*). It was estimated that 100 patients in each group would give an 80% power to detect a mean difference of 1.8 (SD 4.8). The randomisation was done according to Efron's biased coin design (*11*) by a person not belonging to the research group.

Procedure

Eligible patients received written information regarding the study together with the notice for the examination. After a few days, the first author (CA) contacted the patient on the phone and gave oral information about the study. After randomisation the patients received an e-mail with information about whether they had been randomly placed into the Intervention Group (IG) or to Standard Care (SC) and how they could contact CA if they had any questions. Patients in the IG got access to the web-based information through a personal login. After the ^{18}F-FDG PET/CT examination was completed, a questionnaire (see Data collection) was sent by post to all participants along with a stamped self-addressed envelope. A reminder and a copy of the questionnaire were sent after two weeks if there was no reply. It was decided to terminate the inclusion in December 2016, before 200 patients were included (see Discussion below).

Web-based information

The web-based patient information (Web-info) was delivered within a Learning Management System (LMS) and consisted of an eight-minutes slideshow featuring photos, pictures and a voice-over explaining how the ^{18}F-FDG PET/CT examination is performed, why patients needed to follow pre-examination instructions and instructions during procedure, what happens after the examination and how the patients receive the examination results. The manuscript could be read

online and downloaded as a pdf. The LMS also included frequently asked questions with common questions and answers. All material was designed by first author (CA) in cooperation with the last author (BJ). Facts were checked by a radiologist and a physicist with extensive experience of PET/CT. Five patients who were, not included in the present study and were scheduled for an ^{18}F-FDG PET/CT examination were asked to review the web-info after the examination was conducted. Minor corrections were made based on patient opinions.

Standard care

The patients in both SC and IG received two pages of written information regarding the ^{18}F-FDG PET/CT examination along with the time for appointment and location of the Nuclear Medicine department.

^{18}F-FDG PET/CT examination

Patients were instructed to fast for 6 hours and drink 0.5-1 liter of tap water prior to the appointment. During the intravenous injection of 4 Mbq of ^{18}F-FDG per kilogram of bodyweight and the one-hour subsequent uptake phase, patients must be silent, warm and rest. They were instructed to drink 0.5 l of tap water the last 30 minutes of the uptake phase and to void bladder immediately prior to PET/CT scanner. The ^{18}F-FDG PET/CT examination was performed on a Discovery VCT (GE Healthcare, Waukesha), with 64 slice CT. After a low-dose scan for attenuation correction, a scan from the middle of the patient's thigh to the jaw or the top of the skull was acquired. The acquisition time was three minutes per bed position in 3-dimensional mode. Lastly, all patients underwent a diagnostic CT examination with or without intravenous contrast enchantment. It covered the same regions of the body as the PET acquisition. The total

scanner time was 25 to 30 minutes. During this time, the patient needed to remain in the same body position with their arms elevated over their head.

Data collection

Medical and demographic data

Information about age, gender and diagnosis were collected from the referral while civil status, level of education, occupation and income were collected using study-specific questions.

Satisfaction

Overall satisfaction (the primary outcome), constitute the sum of eight satisfaction questions, scoring from 1 (Not at all) to 5 (To a very high degree). Three study-specific questions concerned the satisfaction with the information about the examination and the interaction with the nursing staff. The additional five questions were retrieved from the Patient Experience Questionnaire (*12*) and concerned patients' interaction with the nursing staff, the communication, the professional skills, and the overall impression of the hospital. The eight questions were also analysed as single variables along with an additional question concerning satisfaction with the information about how the patients would receive information about the results of the examination.

Knowledge and discomfort

Five study-specific questions explored participants' knowledge about the ^{18}F-FDG PET/CT examination, how exhausting the examination was, how trapped the participant felt during the examination and to what extent the examination corresponded to the participants' expectations. The participant could also add free text comments regarding their experiences during the examination. The patients who reviewed the slide show before the study began were also

included in a "think aloud" to explore the face validity of the project-specific questions (*13*).
Based on patients' opinions, minor changes were made.

Image quality assessment

Image quality of examinations was assessed by a specialist in nuclear medicine, who was blinded
to the randomisation. A project-specific form with two- or three-point scales was developed to
rate physiological uptake in the larynx (vocal cords), amount of bladder activity, presence of
activated brown fat, motion artifacts, degree of muscle uptake, overall diagnostic accuracy and
variant of uptake (benign or malignant findings).

Use and satisfaction with the web-based information

Information about which of the patients that used the web-info and their number of logins was
retrieved from the LMS. The patients in IG received 15 questions concerning the usability and
satisfaction with the web-info and whether it helped them to prepare for and undergo the ^{18}F-
FDG-PET/CT examination.

Data analysis

Data were analysed using the Statistical Package for Social Sciences, version 24.0. Analyses
were done by intention to treat. Since overall satisfaction was reasonably normally distributed
with similar means and medians in the IG and SC, a T-test was used to analyse mean differences
in overall satisfaction. Most single variables were skewed and analysed with Mann-Whitney *U*
test with regard to differences between the IG and SC. The Chi-square test was used to analyse
differences regarding image quality. Free-text comments were categorised into groups with
similar answers. A per protocol analysis was also conducted, comparing those in the IG who used

the intervention with SC. Differences in demographic data were analysed with the Mann-Whitney *U* test or the Chi-square test.

RESULTS

Patients

One hundred-forty-eight of 393 approached patients (38%) agreed to participate and the response rate was 88% (Figure 1). The most common diagnosis was lung cancer (Table 1). Patients who agreed to participate in the study were younger than those who declined (mean age: 64 y vs 69 y, *p*=0.000). The distributions of diagnoses were different in IG compared to SC (Chi-square test=11.2, *p*=0.01). Fifty-nine patients in the IG and 62 in SC got intravenous iodine contrast during the ^{18}F-FDG PET/CT examination. Twenty-one patients (28%) did not did not log in to LMS, and are hereinafter referred to as "non-users". Non-users were less educated compared to those who used the web-info, and will hereinafter be referred to as "users" (Mann-Whitney *U* test, *p*=0.032). No other differences were found with regard to demographic data.

Satisfaction

The overall satisfaction was high in both IG and SC (IG mean=28.4, SC mean=28.8; Table 2). Also, the satisfaction was high with regard to all single satisfaction items with only small, statistically non-significant differences between groups (Table 2). The lowest satisfaction scores concerned how the patients were notified about the results of the examination (Table 2).

Knowledge and discomfort

More patients in the IG (38%) knew "quite a lot" or "very much" before the procedure of how a PET-FDG examination was conducted compared to patients in SC (16%; Table 3). Forty percent

in the IG and 45% in SC thought the examination was exhausting to varying degrees (Table 2). Also, 41% in IG and 29% in SC felt trapped during the examination (Table 3). None of these differences were statistically significant. Free-text comments revealed that the most positive experiences during the ^{18}F-FDG PET/CT examination was the care provided by the nursing staff (n=59), and that the total procedure was experienced faster than expected (n=27). The time spent in the PET/CT scanner, the fixed position of the body (n=38), and the wait for the results of the examination (n=9) were the most negative experiences.

Image quality assessment

The overall diagnostic accuracy was high for all patients (Table 4). No statistically significant difference between SC and IG were found. The proportions of patients with some degree of quality defect were higher in SC compared to IG with regard to physical uptake in the larynx (60% vs 51%), abnormal bladder activity (22% vs 15%), activated brown fat (5% vs 0%), and motion artifacts (12% vs 8%). With regard to muscle uptake, the proportion with quality defect was a little higher in IG compared to SC (24% vs 22%). Sixty-seven percent of patients in IG and 56% in SC had malignant uptake.

Per protocol analyses

The analyses comparing only users of the web-info in the IG with the SC did not result in any significant differences between the groups with regard to patient satisfaction, knowledge, discomfort or image quality (data not shown).

Web-based information – utilisation and satisfaction

Fifty-four patients (72%) in the IG used the web-info (login: range 1-6). The users thought it was "very easy" (33%) or "pretty easy" (59%) to navigate the web-portal and to use its features, and that the content was easy to understand "to a very high" (12%) or "to a high" (71%) extent (Table 5). They thought that they got access to the web-based information right in time (88%), that they had "much use" (14%) or "quite a lot of use" (53%) for the web-info with regard to the preparations before the examination and that they had "much use" (16%) or "quite a lot use" (57%) of the web-info with regard to undergoing the examination. Thirty-seven percent had "quite a lot use" and 8% "much use" for the intervention with regard to reduced worry about the examination (Figure 2). A majority were "mostly" (55%) or "very" (31%) satisfied with the web-info and would "yes, absolutely" (57%) or "yes, I think so" (41%) recommend it to another patient that should undergo the ^{18}F-FDG PET/CT examination (Table 5).

DISCUSSION

To our knowledge, this is the first study investigating the effects of web-based information on patient satisfaction, knowledge and image quality compared to standard care in patients undergoing an ^{18}F-FDG PET/CT examination. The image quality seemed to be slightly better in the IG compared to SC and users of the web-info experienced various benefits of the information, but there were no statistically significant differences between the IG and SC and the satisfaction with the care provided by the nursing staff was high in both groups. A serious limitation is the lack of power to detect a difference in the primary outcome, the overall satisfaction with care, which is due to the premature termination of the recruitment of patients. Also, more than one of four patients in the IG did not use the intervention which further limited the statistical power and indicated a need for a more convenient access to the web-info.

Similar to our findings another study found no statistically significant difference was observed between patients who received regular information before a colposcopy and those who additionally received video information about the examination procedure (*14*). However, the patient satisfaction was high and there was a reduction of anxiety in the video group (*14*). Also, the high satisfaction with the care provided by the nursing staff during examination in the present study is similar to findings in other studies regarding patient experience of an ^{18}F-FDG PET/CT examination (*4-6*). The lowest satisfaction concerned how the patients would receive information about the results of the ^{18}F-FDG PET/CT examination. These findings are similar to another study revealing that patients may experience anxiety during ^{18}F-FDG PET/CT, mainly due to fear of the results (*6*). This indicates the importance of the nurses who execute the examination, make sure that patients understand how they will receive this information. Some patients experienced discomfort during the ^{18}F-FDG PET/CT examination, especially regarding the time spent in the PET/CT scanner and the fixed body position, which is consistent with our previous findings (*4,10*). It is thereby suggested to find different ways to improve patient comfort during this time.

The image quality assessment revealed a high level of diagnostic accuracy. This is similar to previous findings indicating high image quality both in patients that experienced pain or discomfort during an ^{18}F-fluoride PET/CT examination and those who did not (*10*). There were slightly more image quality defects in SC compared to the IG. Users in the IG reported that the web-info helped them to prepare before the ^{18}F-FDG PET/CT examination and to undergo the examination which may explain the lower frequency of defects in the IG. This is partly similar to findings by Törnqvist et al. (*15*), who found that extended written patient information regarding an MRI examination decreased the presence of image artifacts (*15*). It was also found by (*9*) that the use of web-based information may increase patient intention and adherence to undergoing a

diagnostic examination (9). This indicates the value of extended information before different diagnostic examinations. However, this needs to be investigated further in properly designed trials using image quality as the primary outcome. Considering the high image quality despite the presence of some quality defects suggest that the relevance of the patient preparations and adherence to instructions in connection with ^{18}F-FDG PET/CT examinations, stated in the European Association of Nuclear Medicine guidelines (1), should be investigated in larger populations and if possible revised to reduce patient burden before and during the examination.

The 21 patients who did not use the web-info were less educated than the users and thereby maybe not used to computers and the internet. This is similar to findings by Katz and coworkers (16), who found that level of education was the best predictor of the cancer patient's usage of the internet regarding their conditions. The high mean age in the present sample may be another reason for the proportion of non-users. However, a recent study found that older adults may use the internet to improve their health-related knowledge (17), indicating that web-info may be available for many patients, regardless of age. This was also confirmed by Katz et al. (16), who found that high age is not a predictor regarding non-usage of the internet (16). A possible reason might instead be problems to navigate and use the web-info, which was reported by five of the non-users in the present study. Thus, the web-info was probably not accessible for all patients. If the web-info is introduced into clinical routine, a login will not be required, which may reduce technical problems. However, it is suggested to have good access to support for technical issues if a feature like web-info is used in a trial and requires a login. Also, web-based information cannot replace personal interactions with the health staff but should be considered a way to provide patients with complementary information in a place and at a time of their choice.

This study has several limitations. The study population was too small and the recruitment was terminated before an adequate number of patients could be included, leading to an insufficient power. The written information about the study was sent by the nursing staff at the Nuclear Medicine department who also assessed all referrals regarding patients' eligibility for the study, and the choice to burden the nursing staff with these tasks was not the best, especially given the increasing numbers of referrals to the department during the study period which we did not foresee. It was nor not realistic to re start the recruitment due to a continuous strength work situation at the Nuclear Medicine department. Future studies should seek enough funding to allow research nurses hired specially for patient recruitment. Many patients were difficult to get ahold of, or were unable to participate due to lack of internet and many were scheduled for the examination too soon after the notice was sent out and thereby excluded which made the time for inclusion longer than expected. Studies in larger populations with image quality as the primary outcome are suggested to receive reliable results on the effects of web-based patient information on image quality. One possible way to increase the number of included patients may be to recruit patients in connection with the doctor's visit where the decision to send a referral to the ^{18}F-FDG PET/CT examination is taken, since a personal meeting may increase their motivation to participate in the study. To find ways to give the patients access to internet, e.g., via specially assigned patient computers in hospitals and health centers or by lending tablets to patients in exchanges for a reasonable deposit is another possibility to increase recruitment. Some of the questions in the questionnaire were not evaluated properly for validity and reliability. However, they have been used in previous studies on patient experience of PET/CT examinations and the high response rate indicates that the questions were easy to understand. Since this is the first study on this topic, the results provide valuable knowledge that may be used to develop information routines to facilitate PET/CT examinations for all patients.

CONCLUSION

The effects of web-based information need to be investigated in larger samples of patients. Improved information before an ^{18}F-FDG PET/CT examination may increase patient knowledge and help them to prepare and undergo the examination. It may also improve image quality, but this needs to be investigated in trials using image quality as the primary outcome. The results of this study may be used to improve patient information and thereby patient care and optimise ^{18}F-FDG PET/CT examination procedure. However, in future trials it is important to find strategies to ensure the inclusion of participants and to have good technical support if web-based information is used.
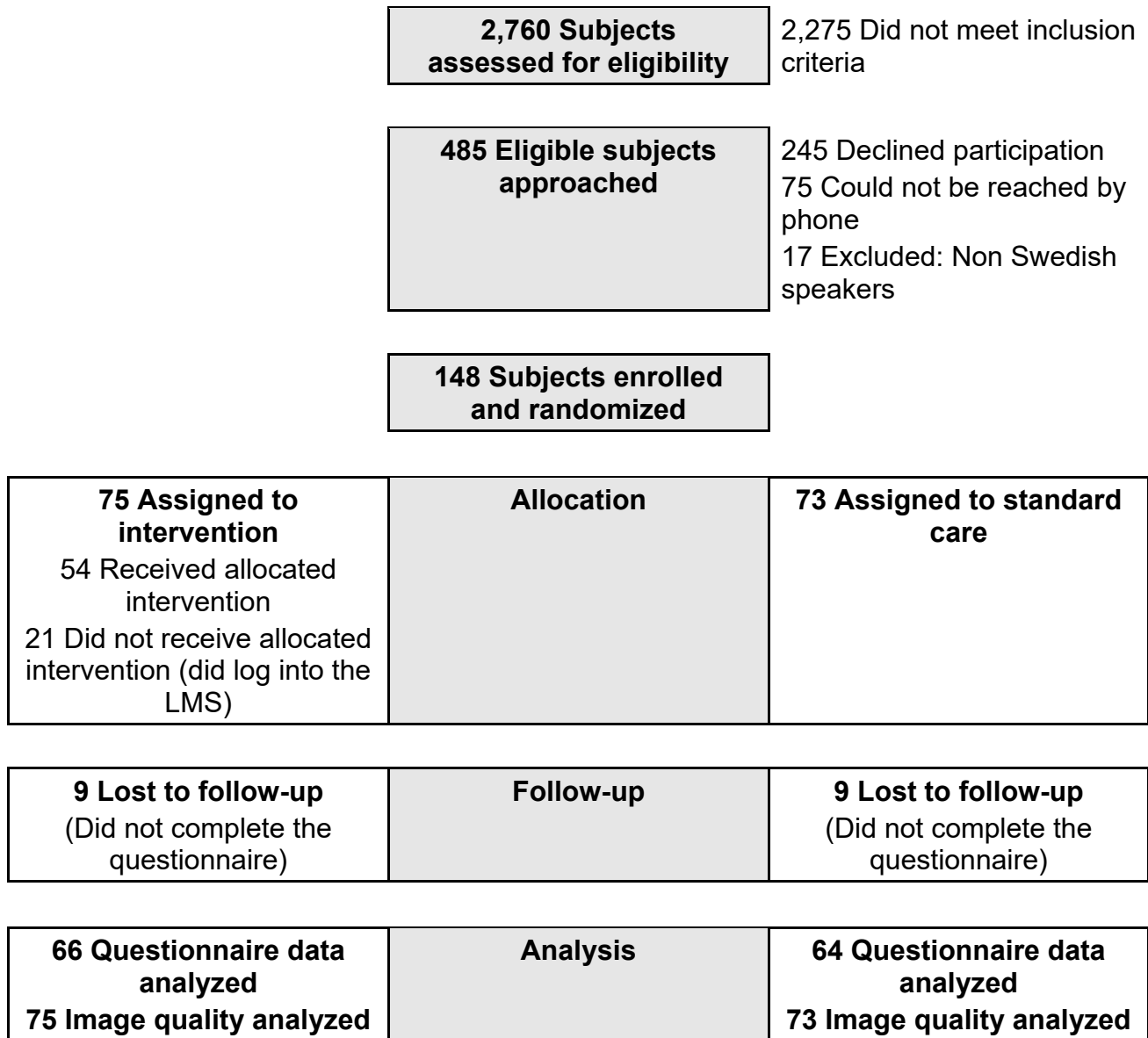
DISCLOSURE

The authors declare no conflict of interest.

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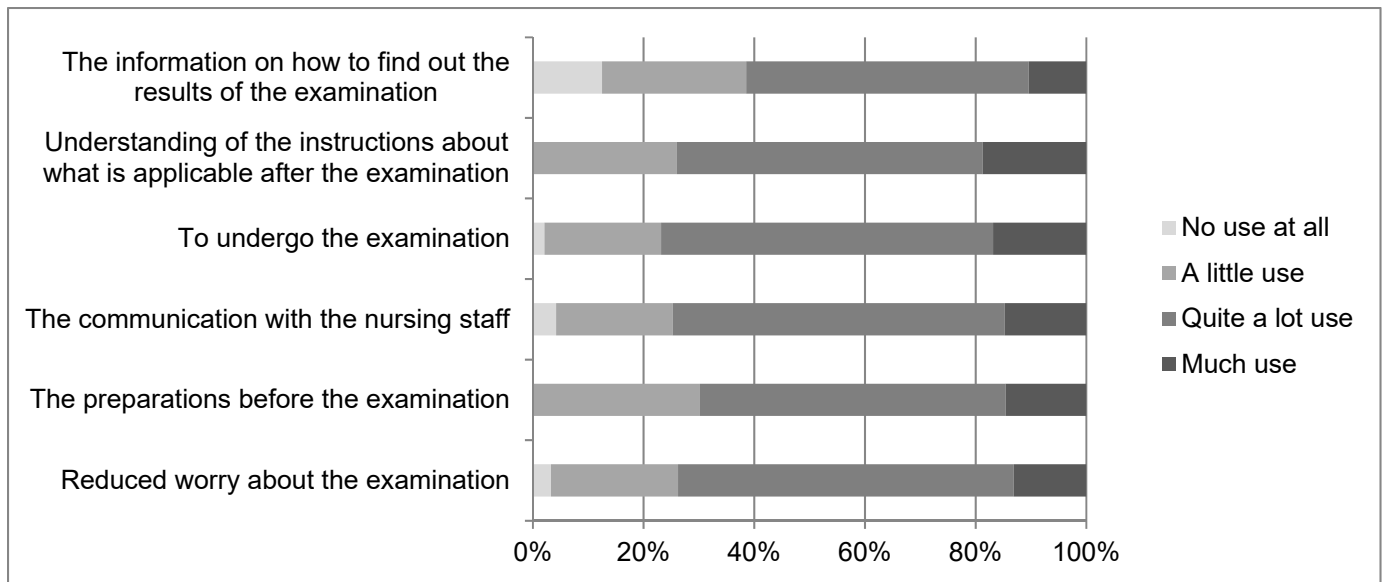
Figure 1. Participant flow.

2,760 Subjects assessed for eligibility	2,275 Did not meet inclusion criteria

485 Eligible subjects approached	245 Declined participation 75 Could not be reached by phone 17 Excluded: Non Swedish speakers

148 Subjects enrolled and randomized

75 Assigned to intervention 54 Received allocated intervention 21 Did not receive allocated intervention (did log into the LMS)	Allocation	73 Assigned to standard care

9 Lost to follow-up (Did not complete the questionnaire)	Follow-up	9 Lost to follow-up (Did not complete the questionnaire)

66 Questionnaire data analyzed 75 Image quality analyzed	Analysis	64 Questionnaire data analyzed 73 Image quality analyzed

Figure 2: How much benefit did you have from the web-based information in the following respects? (n=49 of 54, 89%).

	Standard care (SC) n=73		Intervention group (IG) n=75			
			Used the Intervention n=54		Did not use the Intervention n=21	
	Mean	**Range**	**Mean**	**Range**	**Mean**	**Range**
Age	63	24-84	64	26-80	64	30-80
	n (%)		**n (%)**		**n (%)**	
Known or suspected cancer diagnosis						
Lung cancer	25 (34)		23 (43)		7 (33)	
Colorectal cancer	5 (7)		15 (28)		2 (10)	
Ovarian cancer	9 (12)		5 (9)		4 (19)	
Other	34 (47)		11 (20)		8 (38)	
Gender						
Male	34 (47)		30 (56)		10 (48)	
Female	39 (53)		24 (44)		11 (52)	
Civil status*						
Married/cohabitant	53 (83)		37 (69)		11 (52)	
Single	8 (13)		8 (15)		3 (14)	
Widow/widower	1 (2)		3 (6)		3 (14)	
Living apart	2 (3)		1 (2)		0	
Education*						
Compulsory school	13 (20)		7 (13)		7 (33)	
Upper secondary school	29 (45)		21 (39)		6 (29)	
University 0-4 years	15 (23)		11 (20)		3 (14)	
University > 4 years	7 (11)		9 (17)		1 (5)	
Occupation*						
Working	19 (30)		13 (24)		5 (24)	
Sick leave	6 (9)		2 (4)		3 (14)	
Studies	1 (2)		1 (2)		0	
Homework	4 (6)		0 (0)		0	
Unemployed	2 (3)		1 (2)		0	
Other	32 (50)		31 (57)		9 (43)	
Monthly income (SEK)*						
0-4999	1 (2)		1 (2)		0	
5000-9999	2 (3)		1 (2)		2 (10)	

Table 1: The medical and demographic characteristics.

10000-14999	12 (19)	12 (22)	6 (29)
15000-19999	19 (30)	11 (20)	3 (14)
20000-24999	5 (8)	9 (17)	2 (10)
25000-29999	12 (19)	4 (7)	2 (10)
30000-34999	5 (8)	2 (4)	0
> 35000	7 (11)	8 (15)	2 (10)
PET/CT with iodine contrast	62 (85)	42 (78)	17 (81)
*Did not complete the questionnaire: SC=9, IG (used the intervention) =5, IG (did not use the intervention) =4			

	Rando miza tion	Mean	SD	Md	Min	Max
Table 2: Patient satisfaction with the ^{18}F-FDG PET/CT examination. (Intervention group, IG=66, Standard care, SC=64).						
Overall satisfaction (the sum of question 1-7 and 9)	IG	28.4	5.3	28.0	16.0	36.0
	SCG	28.8	4.9	28.0	15.0	36.0
		Not at all	To a low degree	To some degree	To a high degree	To a very high degree
		n (%)	n (%)	n (%)	n (%)	n (%)
1. Are you satisfied with the information you received prior to the examination?	IG	1 (2)	4 (6)	15 (23)	32 (49)	14 (21)
	SCG	1 (2)	2 (3)	18 (28)	33 (52)	10 (16)
2. Are you satisfied with the information you received when you came to the examination?	IG	0	3 (5)	8 (12)	29 (44)	25 (38)
	SCG	1 (2)	1 (2)	8 (13)	34 (53)	20 (31)
3. Are you satisfied with your interaction with the nursing staff during the examination?	IG	1 (2)	0	8 (12)	27 (41)	30 (46)
	SCG	1 (2)	2 (3)	3 (5)	25 (39)	33 (52)
4. Did the nursing staff communicate in an understandable way?	IG	0	0	7 (11)	28 (42)	31 (47)
	SCG	0	1 (2)	3 (5)	29 (45)	31 (48)
5. Did the nursing staff convey a caring attitude?	IG	1 (2)	1 (2)	7 (11)	23 (35)	34 (52)
	SCG	1 (2)	1 (2)	3 (5)	28 (44)	31 (48)
6. Did you feel confident in the professional skills of the nursing staff?	IG	0	0	4 (6)	27 (41)	34 (52)
	SCG	0	0	1 (2)	25 (39)	38 (59)
7. Did the nursing staff have adequate time for you when you needed them?	IG	0	3 (5)	9 (14)	24 (36)	15 (23)
	SCG	0	1 (2)	5 (8)	29 (45)	29 (45)
8. Are you satisfied with how you will be notified about the results of the examination?	IG	4 (6)	6 (9)	16 (24)	24 (36)	15 (23)
	SCG	2 (3)	9 (14)	11 (17)	26 (41)	16 (25)
9. Did you get the impression that the work of the hospital was well organised?	IG	1 (2)	5 (8)	5 (8)	36 (55)	18 (27)
	SCG	1 (2)	0	10 (16)	30 (47)	22 (34)

Table 3: Patients' knowledge about and discomfort during an ^{18}F-FDG PET/CT examination.		
	IG (n=66) n (%)	SC (n=64) n (%)
Did you know before the examination what a PET-FDG examination was?		
Not at all	25 (38)	23 (36)
Some	17 (26)	26 (41)
Quite a lot	19 (29)	10 (16)
I knew very much	5 (8)	3 (5)
Did you know before the procedure how a PET-FDG examination was conducted?		
Not at all	22 (33)	28 (44)
Some	19 (29)	24 (38)
Quite a lot	20 (30)	9 (14)
I knew very much	5 (8)	1 (2)
Did you feel trapped during the examination?		
Not at all	39 (59)	45 (70)
Some	22 (33)	12 (19)
Much	4 (6)	5 (8)
Very much	1 (2)	1 (2)
How exhausting was the examination?		
Not at all	39 (59)	35 (55)
Some	13 (20)	20 (31)
Much	12 (18)	7 (11)
Very much	1 (2)	2 (3)
Was the examination as you had expected it to be?		
Much easier	11 (17)	5 (8)
A bit easier	13 (20)	17 (27)
Just as I expected	36 (55)	36 (56)
A bit worse	6 (9)	5 (8)
Much worse	0	1 (2)
IG=Intervention group, SC=Standard care.		

Table 4: Results of image quality assessment of an ^{18}F-FDG PET/CT examination.

Image quality parameters	IG n=75 n (%)	SC n=73 n (%)
Physiologic uptake larynx		
None	37 (49)	29 (40)
Some	29 (39)	36 (49)
Much	9 (12)	8 (11)
Amount of bladder activity		
Normal	64 (85)	57 (78)
Abnormal	11 (15)	16 (22)
Presence of activated brown fat		
None	75 (100)	69 (95)
Some	0	4 (5)
Much	0	0
Motion artifacts		
None	69 (92)	64 (88)
Some	6 (8)	9 (12)
Much	0	0
Degree of muscle uptake		
None	57 (76)	57 (78)
Some	17 (23)	15 (21)
Much	1 (1)	1 (1)
Overall diagnostic accuracy		
Good	75 (100)	73 (100)
Intermediate	0	0
Poor	0	0
Variant of uptake		
Benign	25 (33)	32 (44)
Malignant	50 (67)	41 (56)
IG= Intervention group, SC=Standard care.		

Table 5: Use and satisfaction with the web-based information, n=49 (89% of those who used the intervention).

How did you think it was to navigate in the web-portal and to use its features?	n (%)
Very easy	16 (33)
Pretty easy	29 (59)
Quite difficult	4 (8)
Very difficult	1 (2)

Was the content presented so that it was easy to understand?	n (%)
Not at all	0
To a small extent	0
To some extent	8 (16)
To a high extent	35 (71)
To a very high extent	6 (12)

Did you experience technical problems with the web-portal?	n (%)
Not at all	20 (41)
Little	12 (25)
A part	7 (14)
Pretty much	7 (14)
Very much	3 (6)

What did you think about the time when you got access to the web-based information?	n (%)
Too early, it should have been presented at a time closer to the examination	0
It was right in time	43 (88)
Too late, I had wanted access to the web-based information earlier	6 (12)

How much use did you have for the slide show?	n (%)
No use at all	1 (2)
Little use	17 (35)
Quite a lot useful	20 (41)
Very useful	10 (20)

How much use did you have of the written text?	n (%)
No use at all	3 (6)
Little use	15 (31)
Quite a lot use	23 (47)
Much use	7 (14)

How much use did you have for the frequently asked questions module?	n (%)
No use at all	8 (16)
Little use	25 (51)
Quite a lot use	15 (31)
Much use	0

Table 5. *Continuing*

On the whole, how satisfied are you with the web-based information?	n (%)
Very satisfied	15 (31)
Mostly satisfied	27 (55)
Neither satisfied nor dissatisfied	6 (12)
Quite dissatisfied	0
Very dissatisfied	0
Would you recommend the web-based information to someone else who will undergo the same PET/CT examination as you?	n (%)
Yes, absolutely	28 (57)
Yes, I think so	20 (41)
No, I do not think so	0
No, absolutely not	0