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Research article

Women's attitudes and perspectives on the use of artificial intelligence in the assessment of screening mammograms

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ABSTRACT

Purpose: To investigate attitudes and perspectives on the use of artificial intelligence (AI) in the assessment of screening mammograms among women invited to BreastScreen Norway.
Method: An anonymous survey was sent to all women invited to BreastScreen Norway during the study period, October 10, 2022, to December 25, 2022 (n = 84,543). Questions were answered on a 10-point Likert scale and as multiple-choice, addressing knowledge of AI, willingness to participate in AI studies, information needs, confidence in AI results and AI assisted reading strategies, and thoughts on concerns and benefits of AI in mammography screening. Analyses were performed using χ^2 and logistic regression tests.
Results: General knowledge of AI was reported as extensive by 11.0% of the 8,355 respondents. Respondents were willing to participate in studies using AI either for decision support (64.0%) or triaging (54.9%). Being informed about use of AI-assisted image assessment was considered important, and a reading strategy of AI in combination with one radiologist preferred. Having extensive knowledge of AI was associated with willingness to participate in AI studies (decision support; odds ratio [OR]: 5.1, 95% confidence interval [CI]: 4.1–6.4, and triaging; OR: 3.4, 95% CI: 2.8–4.0) and trust in AI's independent assessment (OR: 6.8, 95% CI: 5.7, 8.3).
Conclusions: Women invited to BreastScreen Norway had a positive attitude towards the use of AI in image assessment, given that human readers are still involved. Targeted information and increased public knowledge of AI could help achieve high participation in AI studies and successful implementation of AI in mammography screening.

1. Introduction

Organized mammography screening is shown to reduce breast cancer mortality [1]. However, the costs of running such programs are debated [2,3]. It is well known that the assessment process of screening mammograms is time-consuming as, according to European guidelines, all examinations should be double read [4]. Further, Europe is currently facing a shortage of breast radiologists [5], while organized mammography screening also includes the challenge of false negative and false positive results [6–9].

Artificial intelligence (AI) has over the past years emerged as an assessment tool in mammography screening, to be used for decision support, triaging and/or as a standalone reader [10]. Both retrospective and prospective studies have shown promising results, both in terms of accuracy and in reducing the workload of radiologists [11–14].

A high attendance rate is a prerequisite for a successful screening program, and trust in the program is essential for the invited women in order to participate [15]. The success of AI implementation in organized mammography screening is thus questionable if screening participants do not trust AI software's assessments. Understanding screening participants' attitudes and perspectives on AI as an assessment tool in organized mammography screening is thus essential for a successful

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implementation.

Studies have shown that people are positive towards AI performing assessment tasks in healthcare in general [16,17] and in mammography screening [18–20]. However, the importance of receiving information about the application of AI in their assessment was emphasized [17,21], and a concurrent involvement of human professionals preferred [17,20,22]. Furthermore, level of education and knowledge of AI may affect people's attitudes towards use of AI in clinical work [19,20,22].

Perspectives regarding application of AI may not be directly transferable or generalizable to women targeted by BreastScreen Norway due to differences in screening organization and cultural discrepancies between countries. As of today, we do not know how women in the target group of BreastScreen Norway approach the use of AI in the assessment of their screening mammograms.

To attain more knowledge about attitudes and perspectives on the use of AI in the assessment of screening mammograms in BreastScreen Norway, we performed a survey among women invited to the program, investigating their self-perceived knowledge of AI, willingness to participate in studies using AI, their need for information about the use of AI, their confidence in AI results and different reading strategies, and their thoughts on potential benefits and challenges of using AI in mammography screening.

2. Materials and methods

The study was based on an anonymous survey questionnaire, meaning no approval from the Regional Committee for Medical and Health Research Ethics was required. The questionnaire was sent to all women invited to mammography screening in the population-based breast cancer screening program in Norway, BreastScreen Norway, during the study period October 10, 2022, to December 25, 2022.

BreastScreen Norway is administered by the Cancer Registry of Norway (CRN) and invites all women aged 50–69 years to biennial two-view mammography screening. Invitation letters are received either by postal mail or in a digital mailbox. A digital mailbox is available for all inhabitants in Norway who have actively signed up for the service. In the study period, 60 % of the women invited to BreastScreen Norway had a digital mailbox. The invitation letter states time and place for the examination and describes practical aspects of the program. An information leaflet is attached to the physical letter while the digital invitation letter includes a link to the same text and illustrations as the physical leaflet. The information leaflet describes benefits and harms of participating in the program, aiming to enable women to make an informed decision about participation in the program.

Answering the questionnaire and hence participating in the study was voluntary. The questionnaire was sent either as a paper-based form attached to the physical invitation letter or provided in the digital invitation letter as a link to a digital form. The digital form was provided by https://www.nettskjema.no.

The paper-based form was completed by the individual woman before attending screening and either handed in to the radiographer during the pre-screening interview or sent directly to the CRN. The digital form was completed when appropriate for the individual, and the results were sent to the CRN. The women were also given the opportunity to fill in the form either physically or digitally via a barcode on-site upon arrival at the screening unit. The paper-based forms were collected by the radiographers and sent to the CRN weekly for registration.

2.1. The questionnaire

The questionnaire was developed by a project group including representatives from the target group of the screening program, radiologists, radiographers, and administrative staff and researchers at the CRN. It included 19 questions (Appendix A) and was structured into three sections: I) women's perception of the information provided about BreastScreen Norway in the invitation letter and information leaflet (7 questions), II) women's attitudes and perspectives on the use of AI in the assessment of screening mammograms (9 questions) and III) background information (3 questions). In this study, only information from sections II) and III) was included. Section II) was structured into two parts: in the first part, the respondents were asked to answer six questions on a 10-point Likert scale, and in the second part, the respondents were asked to answer three multiple-choice questions.

For questions in section II, part 1, questions answered on a Likert scale (level of acceptance score 1 to 10), the respondents were asked to rate their knowledge of AI 1) in general and 2) in the health care service, their willingness to participate in a study where AI would be used 3) as a support for the radiologists in their initial assessment and 4) to triage the mammograms into risk groups where a single radiologist would read mammograms with low risk of breast cancer, while two radiologists (independent double reading per standard of care) would read high risk mammograms, 5) their trust in a negative screening result based solely on the assessment of AI and 6) the importance of being informed about use of AI in the assessment of their mammograms.

For section II, part 2, the multiple-choice questions had 6 to 7 options, where the respondents could only choose one. The first question asked about trust in different screen-reading strategies, including the options two radiologists without the use of AI, one radiologist in combination with AI, or only AI without the involvement of a radiologist. The last two questions addressed the main concerns and potential benefits of implementing AI in the screen-reading process.

Section III collected information about age group of the respondents (<55, 55–59, 60–64 and 65+), educational level (6 options) and self-perceived health (extremely good, very good, good, pretty good, and bad).

2.2. Statistical methods

Digital and paper-based responses were merged into one results file for analyses. The background variables were presented as percentages, while the main results were presented as graphs. We collapsed the 10-

Table 1
Definition of grouped Likert scale scores.

Question	Grouped scores	Definition
How would you rate your knowledge of artificial intelligence in general?	1–3	No or little knowledge
	4–7	Moderate knowledge
	8–10	Extensive knowledge
How would you rate your knowledge of artificial intelligence in the health care service?	1–3	No or little knowledge
	4–7	Moderate knowledge
	8–10	Extensive knowledge
Would you be willing to participate in a study where artificial intelligence is utilized alongside radiologists to assess your mammograms in BreastScreen Norway?	1–3	No
	4–7	Maybe
	8–10	Yes
Would you be willing to participate in a study where artificial intelligence divided screening mammograms into risk groups, and those with the lowest risk were assessed by a single radiologist and those with the highest risk were assessed by two radiologists?	1–3	No
	4–7	Maybe
	8–10	Yes
What would you think if you were informed that your mammograms showed no signs of breast cancer, and you knew that the assessment was based on artificial intelligence without the involvement of radiologists?	1–3	Uncertain about the result
	4–7	Moderately confident about the result
	8–10	Confident about the result
If artificial intelligence was utilized in the assessment of your mammograms, how important would it be for you to be informed about this?	1–3	Not important
	4–7	Moderately important
	8–10	Important

point Likert scale into three groups, score 1–3, 4–7 and 8–10 (Table 1), and calculated means with standard deviations (SD).

Questions about self-reported knowledge of AI in the health care service, willingness to participate in studies using AI and trust in AI's independent assessment results were stratified by self-reported general knowledge of AI using cross-tabulations and χ^2 tests. We used logistic regression to estimate odds ratios (OR) of being willing to participate in studies using AI as decision support or for triaging and of having confidence in AI's independent assessment results by self-reported general knowledge of AI. ORs were presented with 95 % confidence intervals (CI) and adjusted for age at invitation, education level, and self-perceived health status. All statistical analyses were performed in Stata MP v18.0.

3. Results

Of the 84,543 women invited to screening in the study period, 8,355 (9.9 %) questionnaires were completed – 6,201 (74.2 %) were paper-based and 2,154 were digital (25.8 %, Fig. 1). Among the respondents, 58.0 % received a physical invitation letter, 40.8 % a digital invitation, while 1.2 % did not remember at the time of their response (results not shown in table). For respondents answering a digital questionnaire, almost 60 % reported their educational level to be university/college up to 4 years or more. For respondents of a physical questionnaire the proportion was about 40 %. Self-reported health was good, very good or excellent according to about 80 % of the respondents of both the digital and physical questionnaire. Not all respondents answered all questions. The average missing rate per question was 6.4 % (results not shown in table).

3.1. Knowledge, attitudes, and trust

Knowledge of AI in general was reported to be no or little by 39.0 % (3,059/7,840), moderate by 50.0 % (3,922/7,840) and extensive by 11.0 % (859/7,840) of the respondents (Fig. 2). Mean score was 4.4 (SD: 2.4), with 1 being the lowest score available and 10 being the highest. When reporting knowledge of AI in the health care service, 46.8 % (3,665/7,823) of the respondents reported to have no or little knowledge, 45.6 % (3,565/7,823) moderate, and 7.6 % (593/7,823) extensive knowledge (Fig. 2). Mean score was 4.0 (SD: 2.2).

When asked about willingness to participate in a study where AI was used as decision support, 64.0 % (5,009/7,829) of the respondents answered that they would be willing to participate, 26.5 % (2,077/7,829) were not sure and 9.5 % (743/7,829) would not be willing to participate (Fig. 3). Mean score was 7.7 (SD: 2.6). When asked about willingness to participate in a study using AI to triage the screening examinations into risk groups, 54.9 % (4,245/7,737) responded that they would be willing to participate, 31.3 % (2,420/7,737) were not sure and 13.9 % (1,072/7,737) would not want to participate (Fig. 3). Mean score was 7.1 (SD: 2.8).

When asked about level of confidence in a negative screening result based solely on AI's assessment, 33.4 % (2,606/7,791) of the respondents stated they would be uncertain about the results, 45.9 % (3,578/7,791) would be moderately confident and 20.6 % (1,607/7,791) would be confident about the result (Fig. 4). Mean score was 5.0 (SD: 2.6). Most of the respondents, 76.6 % (5,678/7,795), considered it important to be informed if AI was involved in the screen-reading process, with a mean score of 8.2 (SD: 2.2, Fig. 4).

When asked about confidence in different screen-reading strategies, both with and without the use of AI, 58.5 % (4,577/7,822) of the

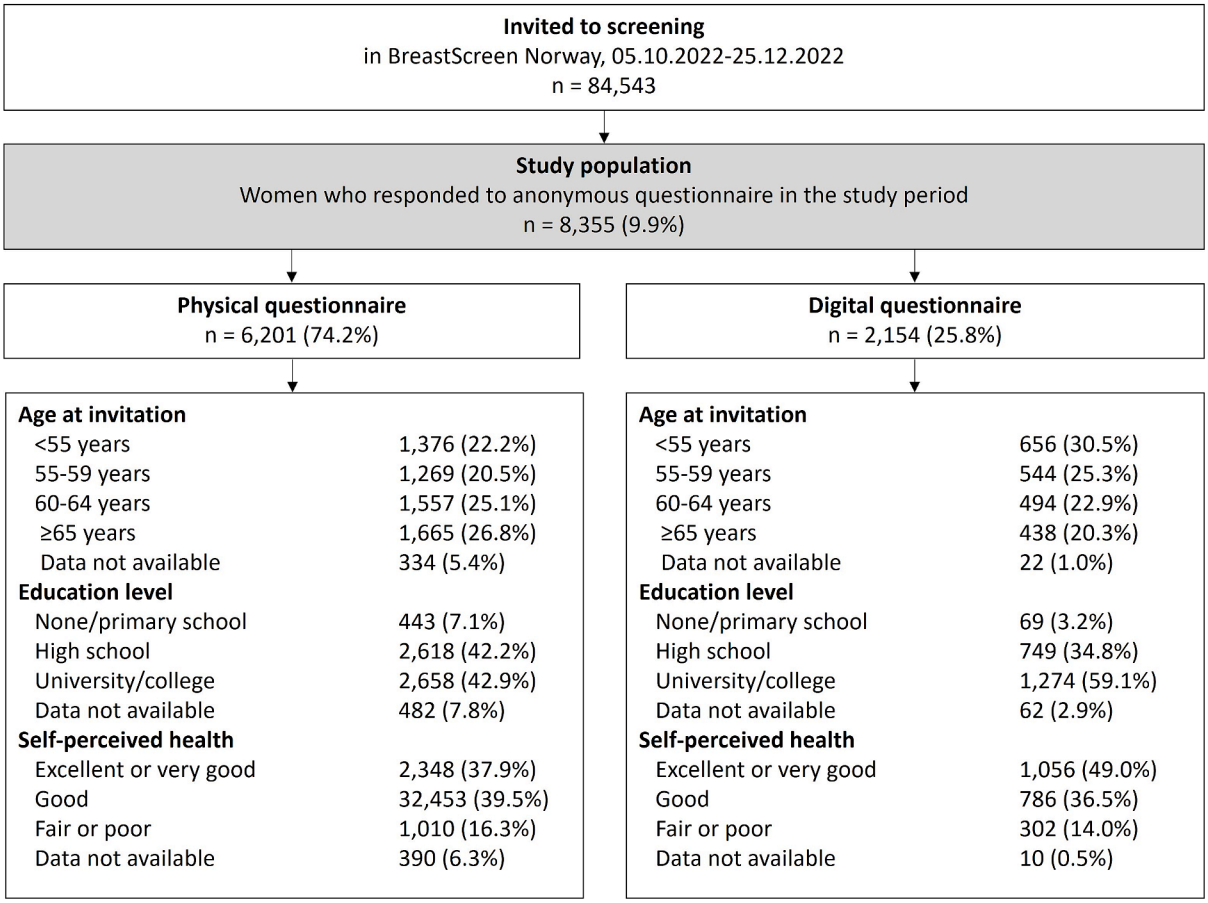

Fig. 1. Study population and background information.

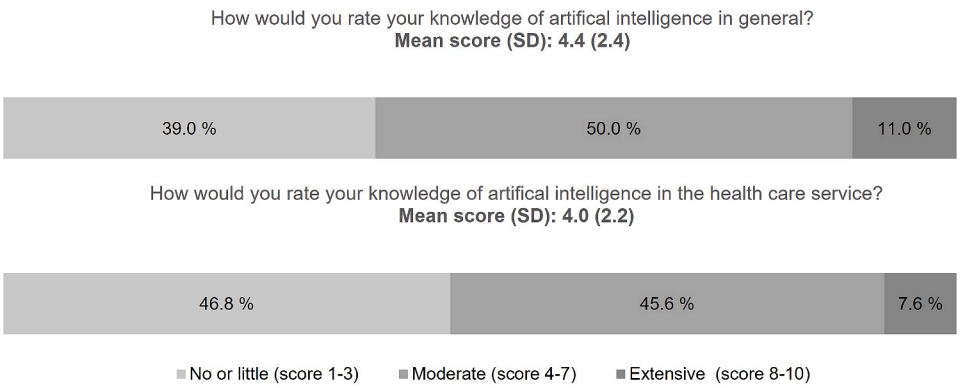

Fig. 2. Self-perceived knowledge of AI in general and in the health care service. SD = standard deviation.

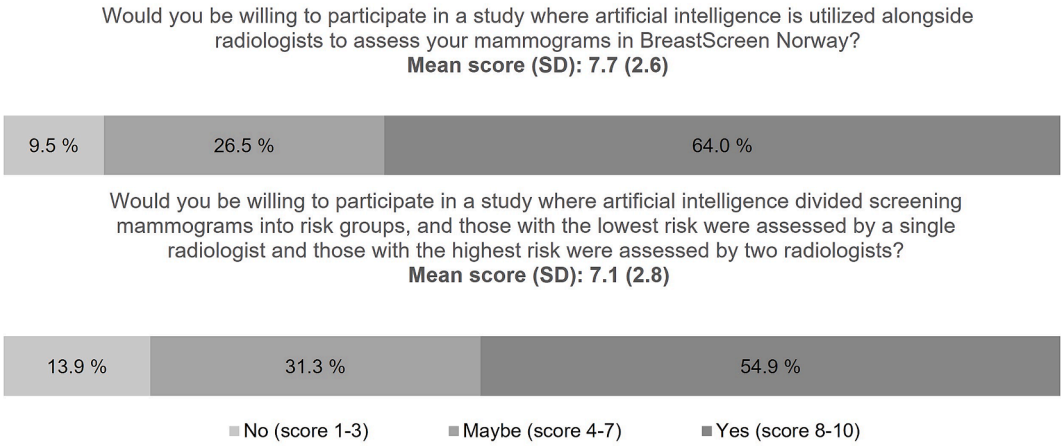

Fig. 3. Reported willingness to participate in studies where AI was used for decision support or for triaging in the assessment of screening mammograms. SD = standard deviation.

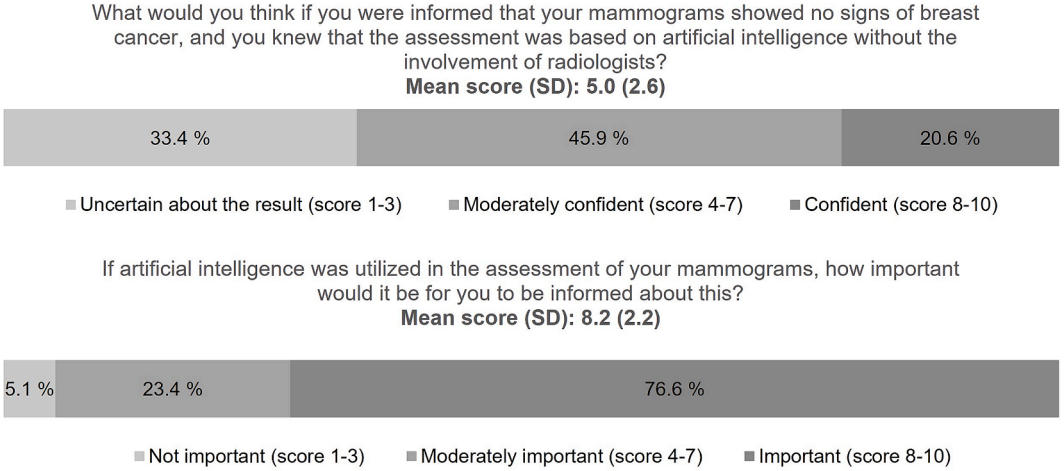

Fig. 4. Reported confidence in a negative screening result based solely on AI's assessment, and the importance of being informed if AI was involved in the assessment of screening mammograms. SD = standard deviation.

respondents preferred assessment by a single radiologist in combination with AI, while 31.1 % (2,434/7,822) preferred two radiologists without AI (Fig. 5). Only 0.5 % (43/7,822) of the respondents preferred the strategy where only AI was used.

A higher proportion of respondents who rated their general knowledge of AI as moderate or extensive was willing to participate in AI studies and would have confidence in the independent assessment results of AI, compared to those who rated their general knowledge of AI as low (Table 2).

The adjusted OR of being willing to participate in a study where AI was used as decision support or to triage examinations into low- and high-risk groups with different reading strategies increased with increasing knowledge of AI in general (Table 3). The same applied to the adjusted OR of being confident in image assessment results based solely

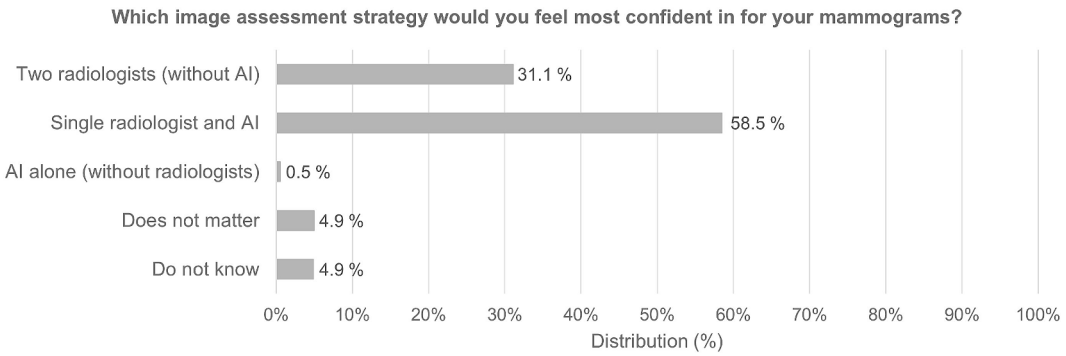

Fig. 5. Reported preferred image assessment strategy.

Table 2
Stratification of self-reported knowledge of AI in the health care service, willingness to participate in studies and trust in AI's independent assessment results by self-reported general knowledge of AI.

	No to little knowledge of AI in general (n = 3,059)		Moderate knowledge of AI in general (n = 3,922)		Extensive knowledge of AI in general (n = 859)		p-value	All participants (n = 7,840)	
	n	%	n	%	n	%		n	%
How would you rate your knowledge of AI in the health care service?									
No to little knowledge	2,874	94.4	724	18.5	63	7.4	<0.001	3,661	46.9
Moderate knowledge	154	5.1	3,065	78.5	335	39.2		3,554	45.5
Extensive knowledge	16	0.5	117	3.0	457	53.5		590	7.6
Would you be willing to participate in a study where artificial intelligence is utilized alongside radiologists to assess your mammograms?									
No	478	15.8	226	5.8	32	3.7	<0.001	736	9.5
Maybe	903	29.9	1,087	27.8	77	9.0		2,067	26.6
Yes	1,640	54.3	2,591	66.4	746	87.3		4,977	64.0
Would you be willing to participate in a study where artificial intelligence divided screening mammograms into risk groups, and those with the lowest risk were assessed by a single radiologist and those with the highest risk were assessed by two radiologists?									
No	621	20.9	376	9.7	67	7.9	<0.001	1,064	13.8
Maybe	1,006	33.8	1,265	32.7	139	16.5		2,410	31.3
Yes	1,350	45.4	2,228	57.6	639	75.6		4,217	54.8
What would you think if you were informed that your mammograms showed no signs of breast cancer, and you knew that the assessment was based on artificial intelligence without the involvement of radiologists?									
Uncertain about the result	1,480	49.2	956	24.6	150	17.7	<0.001	2,586	33.4
Moderately confident	1,220	40.6	2,020	52.0	313	37.0		3,553	45.9
Confident about the result	308	10.2	909	23.4	383	45.3		1,600	20.7

on the performance of AI.

Analyses of the background variables, including age at invitation, education level, and self-perceived health, revealed a trend in the crude ORs of being willing to participate in AI studies and having confidence in AI's independent assessment results, increasing with increasing level of education, and decreasing with decreasing self-perceived health (Table 3).

3.2. Concerns and benefits of AI image assessment

The possibility that machines will take over, leading to a loss of human interaction in mammography screen-reading was considered the main concern if AI were to be implemented in BreastScreen Norway, by 30.2 % (2,335/7,736) of the respondents (Fig. 6A). A higher risk of breast cancer being overlooked was considered the main concern by 25.4 % (1,965/7,736) of the respondents.

Among the respondents, 24.6 % (1,889/7,685) considered a more efficient health care service to be the main benefit of implementing AI in BreastScreen Norway, while 19.5 % (1,498/7,685) considered a higher probability of detecting breast cancer to be the main benefit (Fig. 6B). About one in four (28.6 %, 2,198/7,685) of the respondents answered "do not know" to this question.

4. Discussion

This study indicated that despite low knowledge of AI, women invited to BreastScreen Norway had a positive attitude towards participating in studies including AI in the assessment procedure of screening mammograms. Being informed if AI was used in the assessment of their mammograms was of great importance to the respondents. Respondents reporting to have moderate or extensive knowledge of AI in general tended to be more positive towards participating in studies using AI and have more confidence in AI's independent assessment compared to those reporting to have no or little knowledge of AI. This also applied to respondents with high education levels and self-perceived health status. A higher percentage of the respondents preferred participating in studies where AI was utilized alongside radiologists to assess their mammograms versus in studies where AI was to triage into risk groups, and those with the lowest risk were assessed by a single radiologist and those with the highest risk were assessed by two radiologists.

Our findings were in line with results from other studies, including a 2021 review study with the overall conclusion that patients' and the general public's attitude towards the use of clinical AI was positive [17]. A survey from the Netherlands found that respondents with lower educational levels were less supportive about AI taking over the tasks of radiologists in screen-reading mammograms [22], while a Swedish survey found that low educational levels was associated with lower trust in computerization [19]. A review from 2023 found that digital literacy, prior experience of AI and educational attainment were factors associated with higher acceptance of the use of AI [23].

Despite respondents being predominantly positive towards participating in AI studies, about 35–45 % of the respondents were either in doubt or negative about participation, depending on the study design. This is a non-negligible proportion. A study from the UK found that

Table 3
Crude and adjusted odds ratios (OR) with 95% confidence intervals (CI) of being willing to participate in studies using AI as decision support or for triaging and of having confidence in the results of the AI assessment by self-reported general knowledge of AI.

	Willing to participate in a study where AI is used as decision support for the radiologists*				Willing to participate in study where AI is used for triaging examination into low- and high-risk groups with different interpretation strategies#				Confident in results based solely on AI's assessment¤			
	Crude		Adjusted†		Crude		Adjusted†		Crude		Adjusted†	
	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value	Odds ratio	p-value
Knowledge of AI in general												
No to little knowledge	ref		ref		ref		ref		ref		ref	
Moderate knowledge	1.7 (1.5, 1.8)	<0.001	1.5 (1.4, 1.7)	<0.001	1.6 (1.5, 1.8)	<0.001	1.5 (1.4, 1.7)	<0.001	2.7 (2.3, 3.1)	<0.001	2.6 (2.2, 3.0)	<0.001
Extensive knowledge	5.8 (4.7, 7.1)	<0.001	5.1 (4.1, 6.4)	<0.001	3.7 (3.1, 4.4)	<0.001	3.4 (2.8, 4.0)	<0.001	7.3 (6.1, 8.7)	<0.001	6.8 (5.7, 8.3)	<0.001
Age at invitation												
<55 years	ref		ref		ref		ref		ref		ref	
55–59 years	1.0 (0.9, 1.2)	0.75	1.1 (1.0, 1.3)	0.19	1.1 (0.9, 1.2)	0.37	1.1 (1.0, 1.3)	0.08	1.1 (1.0, 1.3)	0.09	1.2 (1.1, 1.5)	0.01
60–64 years	1.0 (0.9, 1.1)	0.70	1.1 (0.9, 1.2)	0.24	1.0 (0.9, 1.2)	0.64	1.1 (1.0, 1.3)	0.06	1.0 (0.9, 1.2)	0.60	1.2 (1.0, 1.5)	0.01
≥65 years	0.9 (0.8, 1.0)	0.13	1.1 (0.9, 1.2)	0.32	0.9 (0.8, 1.0)	0.23	1.1 (0.9, 1.2)	0.34	1.1 (0.9, 1.3)	0.38	1.4 (1.2, 1.6)	<0.001
Education												
None/Primary school	ref		ref		ref		ref		ref		ref	
High school	1.5 (1.2, 1.8)	<0.001	1.4 (1.1, 1.7)	<0.001	1.3 (1.0, 1.5)	0.02	1.2 (1.0, 1.4)	0.12	0.9 (0.7, 1.2)	0.62	0.8 (0.6, 1.1)	0.14
University/college	2.4 (2.0, 2.9)	<0.001	1.9 (1.6, 2.4)	<0.001	1.9 (1.6, 2.3)	<0.001	1.5 (1.2, 1.8)	<0.001	1.5 (1.2, 1.9)	<0.001	1.0 (0.8, 1.3)	0.89
Self-perceived health												
Excellent or very good	ref		ref		ref		ref		ref		ref	
Good	0.7 (0.6, 0.8)	<0.001	0.8 (0.8, 0.9)	<0.001	0.7 (0.6, 0.8)	<0.001	0.8 (0.7, 0.9)	<0.001	0.6 (0.6, 0.7)	<0.001	0.7 (0.7, 0.9)	<0.001
Fair or poor	0.6 (0.6, 0.7)	<0.001	0.8 (0.7, 0.9)	<0.001	0.7 (0.6, 0.8)	<0.001	0.8 (0.7, 0.9)	<0.001	0.7 (0.6, 0.8)	<0.001	0.8 (0.7, 1.0)	0.02

† Age, education, and self-perceived health.
* Would you be willing to participate in a study where artificial intelligence is utilized alongside radiologists to assess your mammograms?
# Would you be willing to participate in a study where artificial intelligence divided mammographic screening examinations into risk groups, and those with the lowest risk were assessed by a single radiologist and those with the highest risk were assessed by two radiologists?
¤ What would you think if you were informed that your mammograms showed no signs of breast cancer, and you knew that the assessment was based on artificial intelligence without the involvement of radiologists?

women were undecided or ambivalent about the use of AI in mammography screening, expressing a lack of understanding and trust in the technology and a desire to obtain more knowledge [18]. A Dutch survey investigating patients' views on the implementation of AI in radiology, reported that the general attitude towards AI taking over diagnostic tasks of radiologists was not overly positive [21]. Furthermore, the same survey respondents indicated a need for being well informed about the whole diagnostics process, including how and which of their examinations were being acquired and processed by AI. Being informed about the use of AI in one's diagnostic assessment was also proven important in a survey from the U.S. on public perceptions of the use of AI in diagnostics and treatment [16]. The results coincide well with the results from our study. Providing information to the target group is thus of great importance in future studies and implementation of AI in mammography screening in Norway and other countries.

A higher proportion of respondents reported higher confidence in a reading strategy of one radiologist in combination with AI compared to standard of care, independent double reading without AI. A large proportion of the respondents would also be moderately confident or confident about the results if they were informed that AI alone performed their image assessment. This could be attributed to the general positive attitude and knowledge about AI among most respondents, or the fact that the majority of the respondents had higher education and responded due to already being familiar with the topic. However, only a small proportion of the respondents preferred the reading strategy of AI alone without the involvement of radiologists. In the survey performed in the Netherlands, the respondents did not support independent use of AI to assess mammograms, without involving a radiologist [22]. The combination of a radiologist as the first reader and AI as a second reader was preferred, corresponding well with our results. This was also supported in the 2021 review study, stating that the acceptance of AI generally depends on it being used as a support rather than a replacement for healthcare providers [17], and in a 2023 review study, stating that combined human and AI image assessment was strongly favoured over AI acting autonomously [23].

Many of the respondents in our study reported concern that implementation of AI in BreastScreen Norway would result in a loss of human interaction in the screening assessment, as well as lead to an increased risk of false negative screening examinations. This is in line with the study from the U.S., where the majority of the respondents were very or somewhat concerned about misdiagnosis, and reduced time with clinicians [16]. In the Dutch survey of patients' views on AI in radiology, the respondents expressed a strong need for keeping the human interaction and feared that AI would be less accurate compared to radiologists [21].

The fact that many of the respondents were not aware of any benefits of implementing AI in mammography screening in our study could be

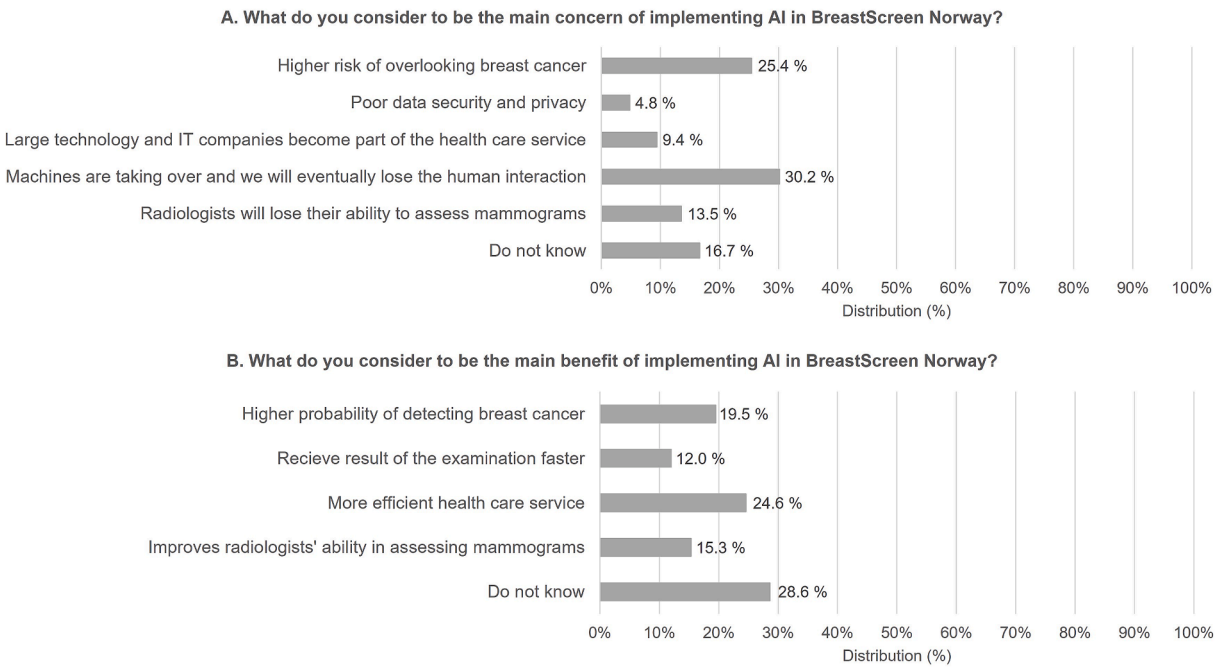

Fig. 6. Reported main concerns (A) and main benefits (B) of implementing AI in the image assessment procedure in BreastScreen Norway.

explained by lack of knowledge or information about the use and advantages of AI in mammography screening, or knowledge about the processes of mammography screening in general. However, many respondents also replied that a more efficient healthcare system and a greater likelihood of detecting breast cancer were the main benefits. This corresponds well to findings in other studies [16,17].

We found higher odds of confidence in AI and positivity towards participating in studies using AI among respondents with high versus low education levels and self-perceived health status. The findings for respondents with high educational level might be related their knowledge about AI. The findings and their relationship to self-perceived health seem more complex and may be related to the life situation the women were in, including trust in the healthcare system, willingness, and ability to see opportunities in new technology and their knowledge of AI.

As far as we know, this is the first study on attitudes and perspectives on the use of AI in mammography screening recruiting all women receiving an invitation to a nationwide screening program during a certain period. Despite a low response rate, the number of survey respondents was substantially higher compared to other studies on the same topic [18,19,22]. A low response rate could however introduce self-selection bias; it is well known that respondents to surveys tend to be better educated, have higher socioeconomic status and lead more active lives than non-respondents [24]. Respondents may also be more interested in or have more knowledge about AI than non-respondents. We consider this, in addition to having no knowledge of the ethnic and cultural diversity of the respondents, as limitations in our study. Most of the respondents filled out a physical questionnaire, regardless of receiving a digital or physical invitation letter. We assume that information about the survey was not clearly visible in the invitation letter and that women who received a digital invitation letter easily could have overlooked the link leading to the survey. It is possible that more visible information about the survey in the invitation letter could have increased the response rate. The survey was limited to only nine questions concerning AI and the results are only applicable to a screening setting and not a clinical setting. The results are not necessarily transferable to other countries where access to screening is opportunistic, limited, or costly.

5. Conclusion

The participants in our survey reported a positive attitude towards the use of AI in the assessment of screening mammograms, expecting AI to increase breast cancer detection and screening efficiency. The respondents emphasized the value of human readers still being involved in the assessment process and being informed if AI was used in the assessment of their mammograms. Targeted information and increased knowledge of AI could help achieve high participation in AI studies and successful implementation of AI in mammography screening. Women participating in screening programs are important stakeholders and including their perspectives will be crucial in future studies and implementation of AI in BreastScreen Norway.

Data statement

Data from an anonymous questionnaire has been used in this publication. The interpretation and reporting of these data are the sole responsibility of the authors, and no endorsement by the Cancer Registry of Norway is intended nor should be inferred.

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CRediT authorship contribution statement

Åsne Sørlien Holen: Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis. **Marit Almenning Martiniussen:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Marie Burns Bergan:** Writing – review & editing, Visualization, Formal analysis, Data curation. **Nataliia Moshina:** Writing – review & editing, Validation, Methodology. **Tone Hovda:** Writing – review & editing. **Solveig Hofvind:** Writing – review & editing, Writing – original draft, Supervision, Project administration,

Methodology, Investigation, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ejrad.2024.111431.

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