



Breast education for schoolgirls; why, what, when and how?

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Breast education for schoolgirls; why, what, when and how?

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ABSTRACT

Schools are fundamental settings for health education and adolescent females are an important group for promoting positive breast habits. We surveyed 2089 schoolgirls (11-18 years) to provide evidence for, and guidance on, breast education for schoolgirls. 26% reported negative feelings about their breasts and 87% reported \geq one breast concern. 72% wanted to know more about breast cancer (69% rating this extremely important). >50% wanted to know more about breast sag and breast pain. Preferred delivery format was age eleven (50%), girls only taught sessions (41%) with female teachers (43%). A need for breast education and delivery preferences was identified.

KEYWORDS: Breast health; Adolescence; Education; Schoolgirls; Puberty

INTRODUCTION

Breast budding is the earliest visible sign of puberty, occurs at around 11 years in UK girls (1), and is the first manifestation of puberty in 85% of girls (2). Within UK schools there is no formal education or guidance on breast development or the wide range of breast issues that may impact adolescent girl's health and behaviour. As adolescence is a critical time when health and risk behaviours become established (3), adolescent females are an important group for breast education. In English state schools, biological aspects of puberty are taught to all pupils through the Science National Curriculum. However, other aspects of breast education are discretionary and there is no requirement for independent schools, academies and free schools to deliver this education.

Breast development is associated with decreased body satisfaction (4) and self-esteem (5). Furthermore, breast pain is recognised as a common health complaint among adolescents (6). Appropriate bra selection is recommended to relieve breast pain (7). Additionally, appropriate bras are effective at reducing breast movement during physical activity, which may damage the breast's supporting structures leading to breast sag (8), embarrassment (9) and functional adaptations (10). Recommendations for well-fitting and supportive bras are common. However, this requires knowledge to determine appropriate fit and support and many women do not wear appropriately sized bras (11). For adolescents particularly, the choice of brands, styles and sizes makes bra purchasing confusing and difficult.

Breast cancer is the most common malignancy among adult females (12). Increasing female adolescent's knowledge of breast cancer risk factors and the benefits of early detection is well-reported (13). Breast awareness has been advocated in the UK since 1990. However, no

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3 interventions have targeted schoolgirls, despite recommendations that breast cancer
4 prevention counselling for adolescents should be routine in preventative health (6).
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9 Schools are fundamental settings for health and social development (14) and effective
10 pedagogy is critical to successful education. Preferences for single-sex group discussions for
11 topics such as sex education are reported (15). However, preferred teaching methods and
12 learning styles for adolescent breast education is unknown. Understanding the need for breast
13 education for adolescent schoolgirls, and their breast concerns and educational preferences, is
14 essential for successful delivery of such an intervention. Therefore, this study aimed to;
15 establish the need for breast education (WHY), determine the content schoolgirls perceived
16 important in breast education (WHAT), and identify the preferred timing (WHEN) and
17 delivery format (HOW) to receive breast education.
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32 **METHODS**

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34 Following focus groups with adolescent schoolgirls, a six-part multiple-choice, Likert and
35 free-text survey was developed. Section one identified demographic, breast size and breast
36 support information. To explore the need for breast education, sections two and three
37 investigated schoolgirls feelings about their breasts and breast concerns. Section four
38 explored preferences for breast education content and section five focused on sport
39 participation related breast concerns (published elsewhere (16). Finally, section six explored
40 delivery and timing preferences for breast education.
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52 Following institutional ethical approval and parental consent, 2089 adolescent schoolgirls
53 competed the survey on paper (n=1869) or online (n=220) (according to schools preference).
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56 Descriptive statistics and Chi-squared tests with pairwise post hoc analysis (SPSS version 21)
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3 explored differences in schoolgirls breast concerns and what they wanted to know more
4 about, across age and breast size. Schoolgirls were categorised as smaller (A to C cup) or
5 larger (\geq D cup) breasted (17), and girls aged 17 and 18 years were amalgamated to meet
6 Chi-squared assumptions.
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11 12 13 **RESULTS**

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15 Respondents (mean age 13.7 (standard deviation 1.5) years) came from English secondary
16 schools and colleges (40% single-sex, 26% mixed-sex, 34% single sex with boys at sixth
17 form). The sample was 57% white, 22% Asian, 10% Black/African/Caribbean or Black
18 British, 5% mixed ethnic groups, and 6% other.
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27 ***WHY; The need***

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29 Seventeen percent of schoolgirls reported feeling 'uncomfortable' when their breasts started
30 to develop (Figure 1). Breast concerns were high, with 87% of schoolgirls reporting at least
31 one breast concern, with the most common being 'how to check for breast cancer' (44%) and
32 'breast bounce when exercising' (44%) (Table 1). Of the 54% of schoolgirls who reported
33 their breast size, 72% were smaller breasted and 28% larger breasted. Four of the 15 breast
34 concerns differed across breast size groups; 'breast bounce during exercise', 'how breasts
35 may look when they are 50', 'sagging breasts' and 'finding bras that fit' were reported more
36 among larger breasted schoolgirls (69%, 55%, 52% and 51%) compared to smaller breasted
37 schoolgirls (46%, 37%, 30% and 37%).
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52 ***WHAT; The content***

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54 Eighty seven percent of schoolgirls reported wanting to learn about breasts and over half
55 wanted to know more about \geq five different breast issues. Seventy two percent of schoolgirls
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3 reported wanting to know about how to check for breast cancer (Table 1), with 67% rating
4 this as extremely important (Figure 2). Significantly more larger breasted schoolgirls wanted
5 to know more about breast sag and breast changes in later life (78% and 56%) compared to
6 smaller breasted schoolgirls (64% and 46%) (Table 1).
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11 12 13 14 ***WHEN AND HOW; The timing and delivery*** 15

16 The most commonly reported age to learn about breasts was 11 years. When rating delivery
17 formats, girls only taught sessions (41%) and class discussions (36%) were the highest rated
18 (Figure 3). When rating teaching styles to learn about breasts, the most frequent response was
19 'fun' (48%).
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27 **DISCUSSION**

28 29 ***WHY; The need*** 30

31 This is the first study to provide evidence of the need for breast education for English
32 schoolgirls. Results showed that only 13% reported positive feelings about their breasts. Most
33 schoolgirls (87%) wanted to learn about breasts and 87% reported breast concerns including;
34 the health, size and appearance of their breasts, others perceptions of their breasts, and how to
35 support their breasts.
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45 ***WHAT; The content*** 46

47 This study identified that schoolgirls wanted to learn about a range of breast related topics;
48 the most common being checking for breast cancer (72%), with 67% rating this as extremely
49 important. Teaching schoolgirls breast awareness may encourage these behaviours in
50 adulthood when breast cancer risk is greater. It may also help girls feel comfortable with the
51 breast changes they experience during puberty. Forty seven percent of schoolgirls were
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3 interested in learning about breast size and shape and how breasts change over time (44%).
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5 Education on these topics may improve body satisfaction and self-esteem and help to
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7 normalise discussions about breasts.
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11 The majority of schoolgirls wanted to know more about breast pain (57%) and sag (57%) and
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13 this was significantly higher among larger-breasted girls. Both of these issues are exacerbated
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15 by breast bounce (17), which was commonly reported as a concern (44%). Despite the
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17 benefits of appropriate support in reducing pain (7), bounce, and sag (8), women do not
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19 always wear appropriately fitted bras (11), which may compromise the bras function. Thirty
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21 four percent of schoolgirls reported concerns about bra sizing and fit, and over 40% wanted
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23 to know more about bra fitting, rating this topic as important. Therefore, information on bra
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25 type and fit should be included in breast education.
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32 ***WHEN AND HOW; The timing and delivery***

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34 The optimum age for girl's breast education has not been investigated, but may improve the
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36 impact of such initiatives. Respondents reported 11 years as most appropriate for breast
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38 education, which corresponds with average ages for breast development in UK adolescents
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40 (1). Schoolgirls reported a preference for female teachers to deliver breast education, in girls
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42 only taught sessions (41%) and class discussions (36%). Discussion and group activities are
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44 common delivery methods used for sensitive topics in school settings (15).
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50 It is acknowledged that the study sample may not represent all UK schoolgirls. However, this
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52 is the first survey of its kind and the sample was drawn from a range of schools in an attempt
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54 to obtain a representative profile of adolescent females.
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CONCLUSION

Only 24% of schoolgirls reported positive feelings when their breasts developed, dropping to 13% when reporting their current feelings about their breasts. Eighty seven percent of schoolgirls reported breast concerns and 87% wanted to know more about breasts. These findings highlight the need for breast education for schoolgirls. The content of such education should include; breast awareness, pain, sag, size, changes, surgery, support and bra fit. Schoolgirls reported 11 years as the most appropriate age to receive breast education; girls only taught sessions and class discussions, delivered by female teachers was preferred. This study provides evidence for, and guidance on, breast education for adolescent schoolgirls.

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Table 1. Frequency of breast concerns reported by all participants and by age.

	Total n	Age (years)							All	X ₂
		11	12	13	14	15	16	17-18		
% reporting breast concerns										
How to check for breast cancer	1983	58 ^a	45 ^a	42 ^a	45 ^a	44 ^a	37 ^a	57 ^a	44	15.665*
Breast bounce when exercising	1954	46 ^a	41 ^a	42 ^a	50 ^a	43 ^a	40 ^a	53 ^a	44	12.55
Breast pain	1969	46 ^{a,b}	44 ^{a,b}	39 ^b	41 ^b	38 ^b	37 ^b	63 ^a	41	19.644*
Boys view of your breasts	1950	43 ^{a,b}	36 ^b	30 ^b	32 ^b	37 ^b	43 ^{a,b}	59 ^a	36	29.969*
Breast size	1976	31 ^{a,b,c}	31 ^{b,c}	27 ^c	36 ^{a,b,c}	39 ^{a,b}	48 ^{a,d}	63 ^d	35	51.856*
How breasts might look when you are 50	1968	40 ^{a,b}	33 ^{a,b}	28 ^b	38 ^a	35 ^{a,b}	41 ^{a,b}	51 ^a	35	23.863*
Having one breast bigger than the other	1973	50 ^a	40 ^a	29 ^b	36 ^b	28 ^b	24 ^b	45 ^{a,b}	34	36.478*
Wearing the wrong size bra	1960	20 ^a	28 ^a	30 ^a	36 ^{a,b}	43 ^b	32 ^{a,b}	53 ^b	34	42.556*
Finding bras that fit	1966	24 ^{a,b,c,d}	28 ^{c,d}	29 ^{b,d}	34 ^{a,b,c,d}	40 ^{a,e}	41 ^{a,b,c,d,e}	53 ^e	34	38.501*
Sagging breasts	1962	37 ^{a,b}	28 ^{a,b}	22 ^b	32 ^a	27 ^{a,b}	33 ^{a,b}	40 ^a	28	22.855*
Embarrassment because of breasts	1965	27 ^{a,b,c}	30 ^c	20 ^b	26 ^{a,b,c}	27 ^{a,b,c}	39 ^{a,c}	41 ^{a,c}	27	27.933*
Breast surgery	1948	47 ^a	30 ^{a,b}	21 ^c	20 ^c	16 ^c	21 ^{b,c}	31 ^{a,b,c}	23	53.097*
Lacking confidence because of breasts	1959	15 ^a	20 ^a	17 ^a	22 ^{a,b}	25 ^{a,b}	29 ^{a,b}	37 ^b	21	26.083*
How quickly breasts grow	1956	21 ^a	25 ^a	20 ^a	21 ^a	18 ^a	21 ^a	28 ^a	21	8.574
Age at which breasts start to grow	1977	23 ^{a,b}	22 ^b	16 ^{a,b}	14 ^a	15 ^{a,b}	20 ^{a,b}	25 ^{a,b}	17	18.052*

% reporting wanting to know more about breast issues

How to check for breast cancer	1993	71 ^{a,b}	70 ^{a,b}	67 ^b	76 ^a	72 ^{a,b}	73 ^{a,b}	81 ^{a,b}	72	14.272*
Causes of and preventing breast sag	1969	51 ^{a,b}	50 ^b	48 ^b	62 ^b	62 ^a	67 ^a	74 ^a	57	44.486*
Causes of and preventing breast pain	1962	65 ^{a,b}	56 ^{a,b}	51 ^b	58 ^{a,b}	57 ^{a,b}	54 ^{a,b}	70 ^a	57	14.754*
Average breast sizes and shapes	1967	45 ^a	46 ^a	43 ^a	48 ^a	51 ^a	47 ^a	58 ^a	47	8.861
How breasts change in later life	1954	48 ^{a,b}	41 ^{a,b}	37 ^b	47 ^{a,b}	45 ^{a,b}	52 ^{a,b}	56 ^a	44	19.144*
Bra fitting	1960	48 ^{a,b,c,d}	35 ^{b,d}	33 ^{c,d}	44 ^{a,b}	47 ^a	41 ^{a,b,c,d}	52 ^{a,b}	41	29.986*
Having one breast bigger than the other	1961	55 ^a	42 ^{a,b}	34 ^b	42 ^{a,b}	34 ^b	32 ^b	45 ^{a,b}	39	25.185*
Breast bounce	1954	44 ^a	35 ^a	33 ^a	39 ^a	35 ^a	28 ^a	43 ^a	36	11.292
Breast surgery	1951	55 ^a	39 ^{a,b}	31 ^b	34 ^b	30 ^b	39 ^{a,b}	27 ^b	34	28.475*
How quickly breasts grow	1963	43 ^a	38 ^a	30 ^a	36 ^a	31 ^a	24 ^a	26 ^a	33	17.497*
Age at which breasts start growing	1955	28 ^{a,b}	28 ^b	23 ^{a,b}	26 ^{a,b}	23 ^{a,b}	20 ^{a,b}	11 ^a	24	13.873*

*Significant difference between ages $p=0.05$

Where subscript letters differ, there are significant differences in proportions between age groups.

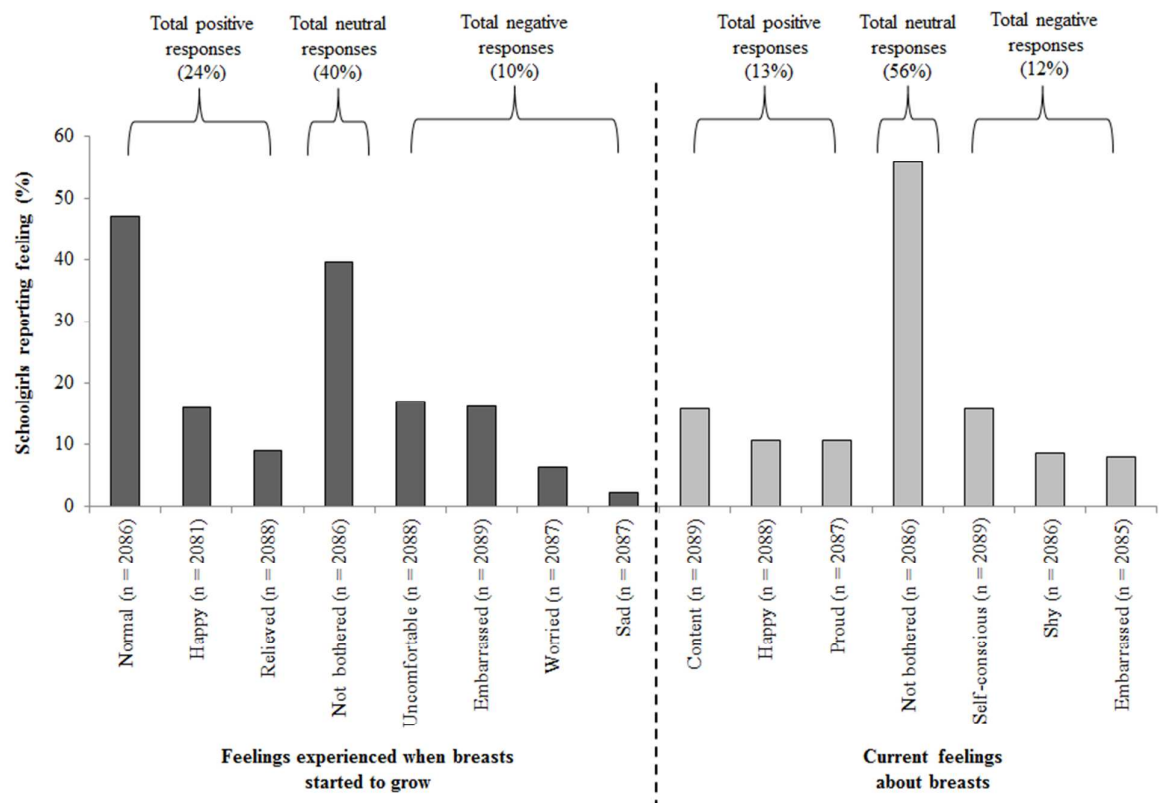


Figure 1. How schoolgirls reported feeling when their breasts started to grow and their current feelings about their breasts.

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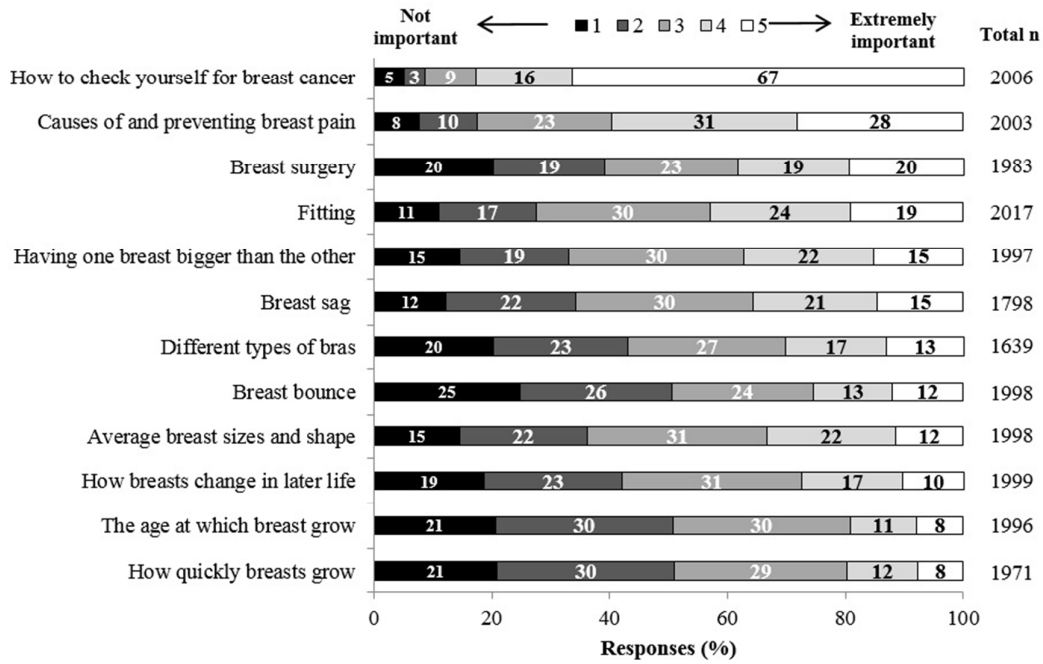


Figure 2. The importance of breast issues rated by schoolgirls on a scale of 1 to 5 (1 = not important, 5 = extremely important).

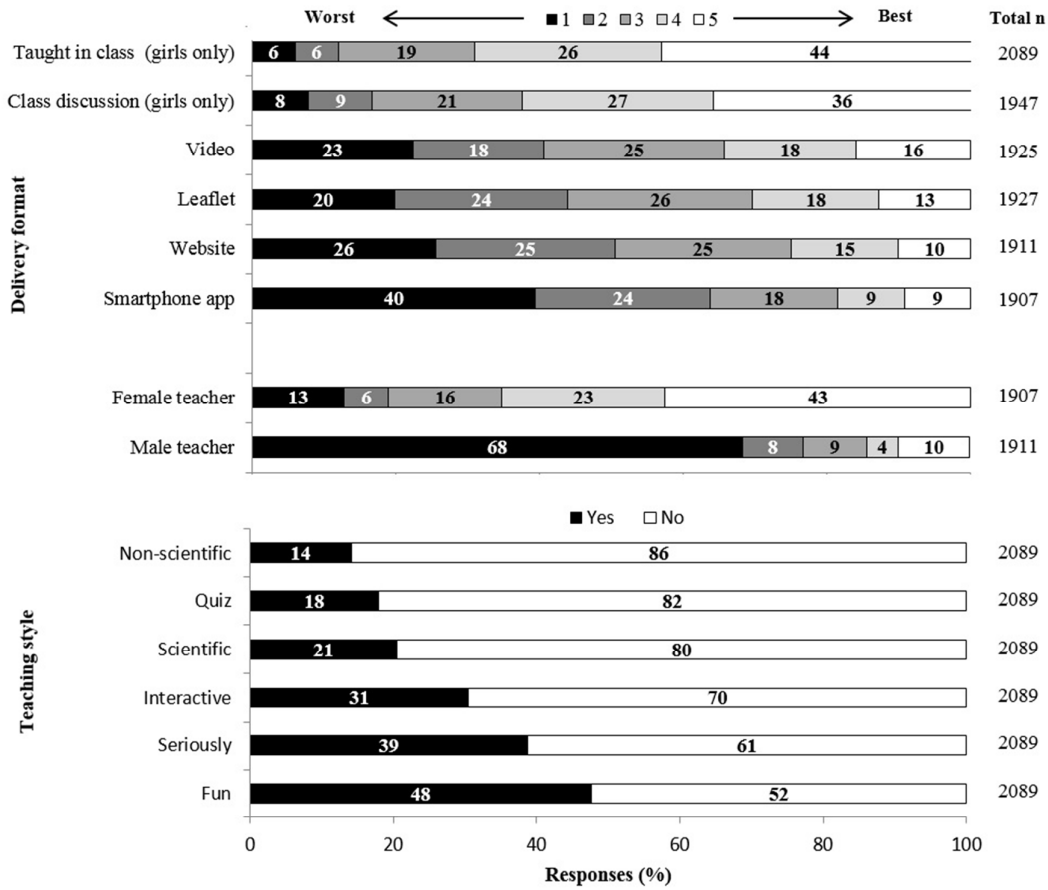


Figure 3. Delivery formats to learn about breasts rated by schoolgirls on a scale of 1 to 5 (1 = worst, 5 = best) and schoolgirls preferred teaching style to learn about breasts.