



Brief communication

Readability of education materials and informed consent forms for women seeking surgical sterilization

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The readability of education materials and consent forms is a serious concern in several health care settings [1]. Sensitivity towards readability of health care information is critical particularly because understanding decreases when medical topics and terminology are unfamiliar. Reading scores are also known to decrease during medical situations that might cause heightened anxiety [2].

According to the 1992 National Adult Literacy Survey, one in four adults in the United States have only rudimentary reading and writing skills, while the average American reads at about the seventh grade level [3]. National data suggest that young women under 35 years who elect surgical sterilization to end their fertility, have lower than average levels of education, literacy, I.Q. and English fluency [4]. Additionally, this type of surgery can also cause high levels of anxiety. These realities make readability of health care

material particularly meaningful for this patient population.

Health education material and consent forms written in both English and Spanish distributed to low income Hispanic women seeking surgical sterilization (bilateral tubal ligation) services at a New York municipal hospital were evaluated for their level of readability using SMOG² estimates Table 1. The SMOG is one of the few formulas able to predict grade levels required for 100% comprehension.

A pamphlet based on alternative contraceptive choices entitled 'Contraception, the Choice is Yours' (Cornell-New York Medical College), extracted most of its narrative from professional journals and required 12.6 years of education to completely comprehend. A second health infor-

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²SMOG formula indicates the presence of long words, has a spearman correlation of $R_2 = 0.84$ with Fry and $R_2 = 0.78$ with Dale formula readability measures. SMOG counts the number of words with three or more syllables in 10 consecutive sentences at the beginning, middle and end of the text. The square root of this number plus 3 gives the SMOG grade.

Table 1
SMOG estimates for education material for women seeking contraceptive sterilization

	Contraception	Sterilization	Consent form
Beginning	23	15	25
Middle	28	16	36
End	41	14	55
Total	92	45	106
SMOG Score ($\sqrt{\text{total} + 3}$)	$9.6 + 3 = 12.6$	$6.7 + 3 = 9.7$	$10.8 + 3 = 13.8$

mation handout entitled ‘Your Sterilization Operation’ written under the auspices of the municipal hospital, offered a comprehensive description of the tubal ligation procedure. This material required 9.7 years of education to understand. Finally, the consent form which must be read, understood and signed by the sterilization candidate before she is permitted to undergo surgery was estimated to require 13.8 years, the equivalent of 2 years of college education to fully comprehend.

Over a 2-month period, women ($N = 61$) attending a mandatory contraceptive sterilization education session at a municipal clinic were asked to voluntarily participate (without compensation) in a pilot study which examined their understanding of educational materials and consent forms used in the education session. The principal investigator issued the survey in person and was available to answer questions as they may have occurred. There was a 100% response rate, and one incomplete questionnaire was eliminated from the analysis.

Among the readers of the health education material, 91% correctly listed alternative contraceptive methods, however, 29% could not list potential side effects associated with the surgery. Sixty-four percent incorrectly believed that the

surgery was fully reversible, and fertility could be easily restored. Readers or written material scored significantly better than non-readers in their general understanding of contraceptive alternatives, side effects, and the permanent nature of sterilization, the results where still not adequate enough to suggest that women were appropriately ‘informed’ by the time they offered consent.

Though analysis is very preliminary, it points towards the need for readable health care materials for patient populations of all literacy levels in general, and for populations with literacy or language proficiency challenges in particular.

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