How important is health promotion in the lifestyle of infertile couples?

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Summary

We sought to elucidate the current attitudes and practices of infertile couples concerning unhealthy lifestyle practices, and examine the extent to which the couples engaged in health promoting activities.

Methods: The study population consisted of consecutive couples who first attended an infertility clinic at a tertiary care clinic between July 1, 1995 and June 30, 1996, and voluntarily completed a questionnaire centered on knowledge, attitude and practices pertaining to unhealthy lifestyles as well as health promoting activities.

Results: The majority of the 106 couples 53%, reported cigarette smoking by at least one partner; 69% admitted to alcohol consumption; and 77% were using over-the-counter drugs. Only 28% of the smokers were knowledgeable about the value of smoking cessation intervention. In 11 of the 50 (22%) nonsmoking couples, both partners had stopped smoking because of their infertility. Awareness of the adverse effects of smoking on fertility was more common among nonsmokers and females. A large proportion of respondents failed to appreciate the periconceptional risks of alcohol consumption and over-the-counter drugs. Only 59 per cent of alcohol users considered its consumption to be undesirable when trying to conceive. Over-the-counter drugs were not considered to impair fertility by 71% of respondents. Compared to males, females were more conducive to health promotion practices as exemplified by smoking cessation, avoidance of second hand smoking, and regular exercising.

Conclusions: Infertile couples seeking medical intervention often disregard lifestyle factors having adverse effects on fertility. Clearly, there is a need for early education on the value of health promotion and prevention in relation to the management of infertility.

Key words: Unhealthy lifestyle; Infertility; Health promotion.

Introduction

Smoking, alcohol consumption and the use of recreational drugs are known to be damaging to reproductive health. These unhealthy lifestyles are increasing among young adults and couples in their reproductive years. Social habits that are detrimental to fertility are no longer limited to tobacco use, caffeine and alcohol consumption [1-3]. As usage of marijuana, cocaine, and heroin besides self-medication with over-the-counter drugs have become much more common [4-6], there is increasing evidence of serious potential long-term adverse effects of these lifestyles on human fertility [4-6]. Tobacco use impairs tubal motility, oocyte survival, sperm production, embryo cleavage, blastocyst formation and hatching, embryo development and implantation [1]. Chronic use of alcohol has been related to impotence and abnormal spermatozoa in men, and to menstrual disorders in women, even after years of discontinuation of the habit [6]. Tetrahydrocannabinol, the active ingredient of marijuana, inhibits secretion of pituitary hormones and ovulation. Similar inhibitory effects on reproductive hormones have been observed from the use of central nervous system stimulants and depressants contained in some over-the-counter medications [7]. In spite of the above evidence, the unhealthy behaviors of infertile couples have not been studied adequately.

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Whereas physicians invest considerable resources in the investigation and treatment of infertility, they often neglect the importance of preventive and health promoting activities pertaining to smoking, and alcohol consumption, besides the use of over-the-counter and recreational drugs. Knowledge of the hazards of these unhealthy practices is likely to motivate infertile couples to improve their lifestyles, at least while trying to conceive. As practices are more relevant than mere knowledge in preventive efforts, we conducted a pilot study to explore specific lifestyle practices of infertile couples.

This study addressed the following three areas: (1) attitudes regarding the role of cigarette smoking, alcohol consumption, and the use of over-the-counter drugs, (2) preventive efforts regarding involuntary exposure to passive smoking, and (3) knowledge, attitudes, and practices concerning stress reduction and health promotion.

Materials and Methods

Sampling

The study population consisted of 115 couples who attended the first author's infertility clinic at a tertiary care center, in Saskatoon, during the twelve-month period from July 1, 1995 and June 30, 1996. We included only couples presenting for their initial consultation in the study. All of the 115 consecutive couples were expected to be included in the study, but nine couples declined to participate. The remaining 106 couples completed a questionnaire centered on knowledge, attitude and

practices pertaining to lifestyle and health promotion activities, and informed consent was obtained orally.

Questionnaire

The questionnaire was designed after preliminary interviews involving test patients. Information from the questionnaires was checked against information from referring physicians and in the patients' charts to ensure validity. All responses were coded, the data being entered into a computerized database for statistical analyses using Epi Info version 6 software (Centers for Disease Control and Prevention, Atlanta, Ga.). Differences between respondents for given characteristics were compared by the Chi-square test of by Fischer's exact test, statistical significance being set at the 5% level. The first part of the questionnaire covered various sociodemographic information such as marital status, level of education and occupation, whereas the second part dealt with knowledge, attitude and practices regarding their lifestyle. The third part of the questionnaire was designed to yield responses to questions about health promotion practices, for example the use of multivitamins containing folic acid, which is gaining popularity, because it lowers homocysteine levels thereby reducing the risk of vascular disease, in addition to decreasing the risk of neural tube defects.

Results

The mean age of the participants was 32.8 years (range 24 - 47 years). Men and women were equally represented, and were married or living in stable, common-law social arrangements. The patients had more than one year of infertility, and were mostly Caucasian-195 patients (92%). One hundred and seventy-one (81%) of the patients had at least a high-school education, one hundred and two (48%) were employed full time or part time, and the rest were homemakers, students, or unemployed. Table 1 lists the responses of the couples to questions pertaining to lifestyle practices. The distribution of the 106 couples by smoking status was as follows: both partners nonsmoking 50 (47%), and 56 (53%) reported cigarette smoking by at least one partner. When these data were regrouped according to gender (Table 2), the smoking habits of male and female respondents did not differ (p=0.8). In 11 of the 50 (22%) nonsmoking couples, both partners had stopped smoking because of their infertility. Of the 56 couples with a least one partner who smoked, 15 (27%) had reduced, 36 (64%) had not, and the other five (9%) increased their cigarette consumption. It was a consistent finding that females were more likely than males to quit smoking while attempting conception quit smoking as detrimental to their ability to conceive (p<0.01). More female respondents also perceived smoking as detrimental to their ability to conceive (p<0.01). A key finding (Table 3) was that only 60 (47%) smokers and 58 (69%) nonsmokers were concerned about the effect of smoking on their infertility (p<0.001); or were knowledgeable about smoking cessation intervention 36 (28%) versus 69 (82%).

Sixty-nine per cent of the couples admitted to alcohol consumption and 77% were using non-prescription drugs (Table 2). Fifty-nine per cent of alcohol users considered this habit to be undesirable when trying to conceive (Table 3). Over-the-counter drugs were not considered to influence fertility by 71% of respondents. With regard to health-promotion practices (Table 4), more of the female respondents used vitamins (p<0.0001); avoided secondhand smoke (p<0.01); and exercised regularly (p<0.05).

Table 1. — *Lifestyle practices of infertile couples*

Habit/response	No. (And % of couples)
a) Smoking	*n=106*
Never smoked (both partners)	17 (16)
Never smoked (one partner)	22 (21)
Quit smoking since attempting conception (both partners)	11 (10)
Smoking at the time of survey*	56 (53)
b) Smoking at the time of survey	*n=56*
Smoking same amount*	36 (64)
Reduced smoking*	15 (27)
Increased smoking*	5 (9)
c) Alcohol consumption	*n=106*
Yes*	73 (69)
No (both partners)	18 (17)
No answer	15 (14)
d) Use of over-the-counter drugs	*n=106*
Yes*	82 (77)
No	17 (16)
No answer	7 (7)

*One or both partners engaged in habit. Percentages may not total 100 because of rounding.

Table 2. — *Genre differences in smoking behavior among infertile individuals*

	Men	Women	All
Habit/response	*n=106*	*n=106*	*n=212*
a) Smoking status	N (%)	N(%)	N(%)
Never smoked	27 (25)	23 (22)	50 (24)
Quit smoking since attempting conception	11 (11)*	23 (22)*	34 (16)
Smoking at the time of survey*	68 (64)**	60 (56)**	128 (60)
b) Concern of smokers regarding adverse effect on fertility	(n=68)	(n=60)	(n=128)
Yes	31 (46)*	41 (68)*	72 (56)
No	20 (29)	11 (18)	31 (24)
No anwer	17 (25)	8 (14)	25 (20)

*p<0.01; **p=0.8

Discussion

Much of the literature on the impact of unhealthy lifestyles on infertility ignores both health promotion and the significance that patients attach to smoking, alcohol consumption and the use of over-the-counter drugs. Several studies have consistently documented the negative impact on human fertility of smoking besides the consumption of

Table 3. — *Knowledge and attitudes of infertile individuals regarding the relationship between lifestyle and infertility*

Question/response	No. (and %) of infertile individuals) Users	Non-users
Concern about the effects of habit on my ability to conceive	n=128	n=84
(a) Smoking		
i. Effects of cigarette smoking on ability to conceive		
Worried	60 (47)*	58 (69)*
Not worried	26 (20)	18 (21)
No answer	42 (33)	8 (10)
ii. I know how to stop smoking		
Yes	36 (28)**	69 (82)**
No	49 (38)	10 (12)
No answer	43 (34)	5 (6)
b) Effect of alcohol consumption	n=161	n=51
Adverse	95 (59)***	39 (77)***
Not adverse	32 (20)	9 (18)
No answer	34 (21)	3 (5)
c) Effect of over-the-counter drugs	All respondents n=212	
Concerned	51 (24)	
Not concerned	150 (71)	
No answer	11 (5)	

*p<0.001; **p<0.0001; ***p<0.01

Table 4. — *Health-promoting practices during treatment for infertility, according to gender*

Desired behavior	Males (N=106)	Females (N=106)
Avoid second-had smoke	30 (28)*	48 (45)*
Avoid alcohol consumption	34 (32)	40 (38)
Avoid over-the-counter drugs	39 (37)	30 (28)
Take vitamin supplements	23 (22)**	78 (74)**
Update immunization	35 (33)	48 (45)
Engage in regular exercise	44 (42)***	59 (56)***
Avoid/reduce stress	67 (63)	69 (65)
Eat balanced diet	70 (66)	85 (80)

*p<0.001; **p<0.0001; ***p<0.05

alcohol, caffeine, and the use of recreational drugs such as marijuana and cocaine [1-5]. However, relatively little emphasis has been placed on preventive approaches such as education and self-monitoring, that would motivate infertile couples to quit or reduce these practices and avoid indirect exposure to toxic agents. Physicians often refrain from initiating counseling on smoking, and limit themselves to the provision of advice upon a specific request [8]. However, we suggest the integration of health promotion efforts, particularly those directed to avoiding health damaging habits, into a treatment strategy for infertile couples. This approach provides due consideration to lifestyle modification besides the provision of specific treatment aimed at improving fertility.

Fertility clinics, including ours, routinely provide advice to couples about primary preventive services, periodic health screening, smoking cessation, and immunization. Purely giving advice is generally viewed as paternalistic, threatening, and controlling by most couples [11], and might work only with a minority of patients. An effective intervention strategy to influence the behaviors of patients requires their enthusiastic agreement and active participation. This patient-centered approach takes into consideration the patient's feelings, concerns or lack of concerns, and expectations about unhealthy behaviors. Our observations that 24% of smokers were not concerned about the effect of their habit on fertility, and another 18% were indifferent, reflect a need for a different approach to counseling which focusses on minimizing patient resistance to change. Whereas the majority of couples in our study underestimated the deleterious effects of alcohol and over-the-counter drugs on fertility, 22% had already discontinued smoking since attempting conception. This finding confirms other data that most patients have the capability to change, but prefer to decide whether and when to change [12, 13]. An approach by physicians that is supportive of patients' responsibility for change, acknowledges patients' feelings and strengths, and assists patients in understanding the importance of interventions is more likely to enhance motivation in that direction.

There is little doubt from our results that patients engaged in unhealthy lifestyle practices are in greater need for counseling on making lifestyle adjustments which could enhance their chances at conception in addition to other health benefits, and males more so than females. This finding is consistent with evidence that the effects of infertility and its treatment impact more on females than on males in general [9, 10]. Screening for unhealthy lifestyle practices could help identify those patients who may benefit from active behavior modification interventions.

Unfortunately, the study design did not allow us to assess the degree of congruence between male and female partners regarding attitudes toward lifestyle risk behaviors. However our results suggest that the female may be the more positive and active partner for effecting a behavior change to a more active stance on health promotion. We infer from our results that health promoting practices are still confusing to a large proportion of infertile couples. Although most female respondents were able to identify the need for folic acid supplements, less than half avoided second-hand smoke or updated their immunization.

Health professionals have a responsibility, as part of a comprehensive approach to infertility therapy, to provide couples with appropriate information about unhealthy lifestyles, and counseling on lifestyle modification toward health-promotion in a nonjudgmental fashion. Physicians involved with infertility therapy should adopt a patient-centered approach in working with couples to identify their attitudes to unhealthy behaviors before considering motivational interventions toward health promotion. Further study is needed to evaluate appropriate health promotion strategies for infertile couples.

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