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How do pregnant women justify smoking? A qualitative study with implications for nurses' and midwives' anti-tobacco interventions

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Abstract

Aim. To research the subjective lay justifications expressed by smoking pregnant women to explain why they use cigarettes during pregnancy and to determine a typology for these justifications.

Background. Smoking pregnant mothers' awareness of the detrimental effects of smoking on foetal health frequently is a source of stress and cognitive dissonance (stemming from the contrast between viewing themselves as responsible mothers and smokers). One possible way to reduce these unpleasant feelings is acceptance or creation of beliefs allowing them to explain rationally why they continue this behaviour during pregnancy.

Design. Qualitative design.

Methods. Thematic analysis of the content of posts from the three largest Polish parenting on-line forums written between the time they were founded and 12 November 2012. The data were collected between September - October 2012. During the analysis of the selected 73 posts, each of which included subjective explanations of smoking during pregnancy, 151 fragments, each containing one lay justification, were identified and analysed.

Findings. Thirty-five subthemes of lay justifications assigned to two main themes were developed. The first main theme includes convictions that undermine the need to break the nicotine addiction and the positive aspects resulting from quitting. The second main theme comprises beliefs that question the possibility to abstain from smoking and exaggerate the barriers in the process of quitting.

Conclusions. The creation of a typology of lay justifications might help nurses and midwives perform more effective anti-tobacco interventions geared specifically towards the thought patterns typical of pregnant women.

Keywords: smoking, pregnancy, lay justifications, risk perception, care provider counselling, midwives, nurses, nursing

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Why is this research or review needed?

- Organization of effective anti-tobacco education for pregnant smoking women requires the recognition of lay justifications expressed to rationalize the behaviour and the adjustment of the educational message accordingly.
- The detailed analysis of lay justifications expressed by smoking pregnant women and creation of the typology of the justifications has not been the aim of any qualitative research to date.
- Previous qualitative research on the reasons for smoking during pregnancy was based on face-to-face interviews; however, the topic sensitivity could have influenced findings, which shows the need for unobtrusive studies.

What are the key findings?

- Research shows how smoking pregnant women reduce the perception of the risks that smoking imposes on their offspring by presenting beliefs negating the need and the advantages of quitting smoking.
- Pregnant women are in a vicious circle – they smoke to handle stress and mental discomfort resulting from knowing they harm the foetus and experiencing social pressure to abstain from smoking.
- Some women painstakingly build substantial justifications of their behaviour by modifying the recommendations to break the addiction that they receive from health professionals.

How should the findings be used to influence policy/practice/research/education?

- Anti-smoking educational programmes for pregnant women should reach beyond stating the harmful effects of smoking because women will offer counterarguments based on their numerous experiences and observations.
- Pregnant women might feel confused because they receive conflicting information about abstaining from smoking, which creates a need for the professionals to identify the contradictory information and clarify it.
- Pressure to quit smoking might intensify the addiction; thus, professionals should recognize the women's thought patterns and adjust their interventions to motivate patients to quit, not stigmatizing them.

Introduction

Smoking during pregnancy constitutes one of reasons for its complications and is a threat to the health of the mother and her offspring. Despite widespread knowledge of its harmfulness, this behaviour is a challenge in the majority of the Euro-American world. Over 10% of expectant mothers admit smoking in most European countries (including Poland, where the study described in this article was conducted), Australia and the United States, whereas in Japan, one in ten pregnant women smokes (Kaneita *et al.* 2007, EURO-PERISTAT Project with SCPE and EUROCAT 2013, Li *et al.* 2011, Tong *et al.* 2013). Nevertheless, a biochemical examination shows that the actual number of pregnant women who smoke is a few percent higher (Schneider *et al.* 2010). Smoking during pregnancy mostly involves women of low socioeconomic status. These women are heavily dependent on smoking and function in a smoking environment, which makes them difficult addressees of anti-tobacco interventions (World Health Organization 2010).

Medical staff (especially midwives and nurses) can play an important role in such interventions (mostly in supporting women to quit) (Lendahls *et al.* 2002). International studies indicate that although various health professionals inform women about the harmfulness of smoking and recommend quitting, they do not provide broader/effective help in breaking the addiction (i.e. adjusting their educational message to the patients' motivation, discussing methods and the effects of quitting) (Chapin & Root 2004, Jordan *et al.* 2006, Baxter *et al.* 2010). Some medical professionals trust that narrow, one-track education is sufficient and others doubt their own ability to implement broader educational programmes (Clasper & White 1995, Everett *et al.* 2005, Jordan *et al.* 2006, Baxter *et al.* 2009); therefore, the competency of both groups should be improved.

Background

Smoking during pregnancy, the knowledge about its harmful effects and social pressure to abstain from smoking generate a cognitive dissonance. Pregnant women who smoke face a conflict between considering themselves good mothers who wish to quit and mothers who cannot control their addiction and are thus harming their children. Consequently, they experience mental discomfort and stress (Festinger 1957, Lazarus & Folkman 1984). Research showing the prevalence of smoking among pregnant women and the biological bases of their difficulties in quitting (Ebert *et al.* 2009) poses the hypothesis that to reduce the cognitive dissonance, a significantly large proportion of these women does not quit smoking; instead, they modify their perceptions of the addiction and pregnancy and sometimes they alter their smoking patterns. This indicates that pregnant women who smoke subjectively rationalize that quitting during this period is unnecessary, impossible, ineffective and even detrimental.

The thought patterns allowing women to continue smoking during pregnancy are elements of lay knowledge and

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beliefs derived from personal experiences, observations and overheard/read information. The methods of generating, recognizing and categorizing lay knowledge and beliefs do not adhere to those applied in the world of science. They are often targeted at delivering not always true but rather convenient/useful premises for performing or refraining from certain actions (Puchalski 1997, Puchalski & Korzeniowska 2004, Blaxter 2010).

This explanation might justify the limited efficacy of narrow anti-tobacco education. Healthcare professionals' arguments based on medical/epidemiological research often contradict well-grounded lay values, knowledge and logic. Ostrowska shows that 'rigid prophylactic programmes disregarding addressee's beliefs often try to convince him/her to make irrational decisions when viewed from the perspective of his/her experiences and subjectively perceived conditions. Whereas from his/her perspective individual interpretations and definitions lay foundations for the rationality of specific prophylactic behaviours' (Ostrowska 2011, p. 88). Hence, in recent years, preventive health care has concentrated on shaping lifestyles/behaviours through a dialogue (i.e. motivational interviewing) (Rollnick *et al.* 2008) that not only imposes on patients a medically justified view but makes references to their own ways and content of thinking.

To improve anti-tobacco interventions, it is imperative to perform an analysis of pregnant smoking women's lay justifications, namely their explanations of continuing the behaviour, which allow them to subjectively rationalize it. Previous research has not focused on a detailed recognition of such thought patterns; however, numerous authors have examined their selected elements, i.e. barriers to quitting during pregnancy (i.e. Dunn *et al.* 1998, Hotham *et al.* 2002, Tod 2003, Abrahamsson *et al.* 2005, Flemming *et al.* 2013, Hammer & Inglin 2014). These studies were based on face-to-face interviews, which might have influenced the content/spectrum of the women's responses (Babbie 2013), especially considering that the topic of the interviews is not socially accepted (Tod 2003, Abrahamsson *et al.* 2005, Hammer & Inglin 2014). Therefore, there exists a need to perform a qualitative, unobtrusive study. This type of study is possible through an analysis of the content of pre-existing diaries, blogs or internet forums.

The study

The Aims

The aim of the study was to recognize lay justifications expressed by women to justify why they continue smoking during pregnancy, to present the diversity of the justifications and to create their typology.

Design

This is a qualitative study based on the thematic analysis of the content of the textual data collected from internet forums where women presented reasons for smoking during pregnancy (Braun & Clarke 2006, Silverman 2011, Babbie 2013). It was an unobtrusive study, which means that the authors analysed women's thought patterns without affecting the women or the content of the posts (the researchers were the observers, did not add any posts on the analysed forums and did not contact the participants) (Babbie 2013).

Sample

The sample comprised all (in total 47) women active on three internet forums, who presented subjective reasons for smoking during pregnancy. They mentioned their own or other women's experiences. They did not belong to a certain/thematic group of users of these forums.

Data collection

In addition to the possibility of performing an unobtrusive study, there existed two additional reasons for choosing on-line forums. First, on-line forums provide users with the feeling of anonymity, are a gathering place for many people in a similar predicament and encourage people to seek support, share doubts and offer spontaneous and truthful remarks (Pyżalski 2012). Second, this form of communication is popular among pregnant women (Lagan *et al.* 2010).

The data were collected in multiple stages. The forums were identified with the help of a Google search engine where the Polish words 'pregnancy+forum' were entered. On 1 September 2012, the authors compared the number of registered members on Polish internet parenthood forums and selected the three most popular forums: babyboom.pl, dziecko-info.rodzice.pl and mamazone.pl. Next, the Polish words for 'smoking', 'cigarette(s)', 'tobacco', 'addiction' and 'nicotine' were entered into the search windows. This resulted in the identification of 58 threads with 2724 posts created in the period between the founding of the forums and 12 November 2012 related to the topic of smoking during pregnancy. Then, all (in total 73) posts that were written by the research sample and included at least one subjective reason for smoking during pregnancy were selected. Finally, fragments (in total 151) from the posts

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were identified that each contained a single lay justification. The data were collected between 1 September - 13 November 2012.

Users of the chosen forums were all people interested in the topic of parenthood, who after registration were allowed to share their experiences/opinions, comment on other users' posts and ask/answer questions. The forums served as an information exchange for laypeople, not as a channel for their communication with experts. The frequency of contact depended only on their members' individual needs.

Ethical considerations

The Bioethics Committee approved the study design. The forum administrators were informed of the research. The sample was not informed of the research, because this would be contrary to the definition of an unobtrusive study. The participants' anonymity was guaranteed by not presenting the women's usernames or the names of the forums while quoting the posts in the article. The analyses were performed in accordance with the guidelines for on-line research (Markham & Buchanan 2012).

Data analysis

One hundred and fifty-one fragments containing a single lay justification were analysed thematically. The authors used an inductive approach where the content of the data directed the coding and theme development (Braun & Clarke 2006). The data were coded to identify initial themes. Coding enabled grouping of data, sorting and identification of 35 subthemes assigned to two main themes concerning lay justifications: 1. questioning the need to refrain from smoking and its positive effects; 2. questioning the possibility to quit smoking and exaggerating the barriers to achieve this. The main themes and subthemes are presented below, supported by exemplary quotations from the women.

Rigour

For the data collection, three researchers were responsible for reading 58 threads and selecting posts with lay justifications. They independently created a list of posts that justified a behaviour. Then, they discussed and agreed to a compromise on a database comprising 73 posts. Later, they individually selected fragments of posts containing a justification. In a discussion that followed, they reached a consensus and created the final list including 151 fragments. Finally, two other independent researchers verified this process for accuracy and appropriateness. To ensure rigour in data analysis, the authors independently developed codes, themes and subthemes, and these were discussed until a consensus was reached.

Findings

There was no universal depiction of the rationale for smoking during pregnancy. Some justifications were repeated in the posts of many research participants, whereas others were mentioned sporadically. Some justifications were specific for pregnancy (mostly those included in the first theme); others were common to the smokers regardless of pregnancy (mostly those in the second theme). The authors wish to demonstrate the variety of lay justifications that nurses and midwives might encounter at work without assessing their distribution in the sample.

The lay justifications of pregnant smoking women

Beliefs questioning the need to refrain from smoking and its positive effects

Addiction to nicotine poses no threat to the child's health. For women, the most convincing proof of this belief is observing no effects of smoking on their offspring even though they do/did smoke during the current/previous pregnancy. They also gave examples of healthy children delivered by other smokers (those aware of their own mother's smoking during pregnancy mention themselves as proof of its harmlessness):

> I've been smoking for the first trimester and nothing has happened to the baby, so still there's no risk.

Smoking a low number of cigarettes poses no/little danger to the foetus's health. Some pregnant women restricted smoking, believing that this would protect their children. Sometimes, they quoted a specific number of cigarettes that they believed to be safe to smoke per day:

> Nobody'll dare to say out loud: 'smoking while pregnant doesn't harm'. But a teratogenic effect only happens if you smoke a packet a day. A cig won't do harm.

Smoking is harmless in a particular trimester. Some women believed that smoking is safe during the first trimester because possible harm to the foetus will be counterbalanced before delivery. Another explanation is that because the placenta has not fully formed during the first trimester, nicotine does not affect the baby. Others claim that

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smoking is allowed only in the second trimester because in the first trimester, a baby's organs are being formed, whereas smoking in the third trimester might cause premature delivery. Others say that this behaviour is permissible until the beginning of the last trimester because before birth, the foetus will compensate for possible developmental delays caused by smoking:

I read if I quit before the 30th week of pregnancy, the baby is going to catch up on its development.

Smoking poses little threat during pregnancy in comparison with other risk factors. Some mothers believed that by refraining from other addictions, they were taking sufficient care of the foetus:

I simply can't quit. There's some consolation that drinking alcohol is much worse. I gave it up with no effort.

Sudden or complete withdrawal might negatively influence the pregnancy or the baby's health. Smokers claimed that the foetus might be addicted to nicotine and if so, quitting suddenly is not recommended. Some believed that abstinence syndromes (mostly stress) experienced by women would negatively affect pregnancy, i.e. cause miscarriage. Others were convinced that quitting might lead to congenital defects or a release of toxins in the mother, which would harm the baby:

My friend was so frustrated while quitting that she started biting her fingernails and almost the tips of her fingers, too. She lost the baby. The diagnosis was miscarriage because of the hormone build-up connected with her attempt to quit.

Following numerous restrictive guidelines while pregnant might have negative consequences. Although the women recognized that many medial recommendations concerning pregnancy (including treatment of addictions) are scientifically justified, they believed that abiding by all of them would be too arduous and possibly more harmful for the foetus than smoking:

I know that what's harmful is scientifically proved, but what the hell, aren't we allowed to do anything? If I'd forbidden myself from doing anything, who knows what the pregnancy would've been like. In any case, it was fine.

Disregarding superstitions can pose a threat to the pregnancy or the baby's health. Some mothers had magical thinking. They believe in superstitions and use them to validate smoking:

When I started suspecting pregnancy, I didn't quit because I didn't want to jinx it. That would be like buying baby clothes at the beginning of pregnancy.

The occurrence of negative effects of smoking on the offspring's health is a matter of likelihood. Some woman did not deny the harmfulness of smoking during pregnancy; however, through observations of the health conditions of their own/other smoking women offspring, they concluded that the consequences do not always occur. They continued smoking, hoping their own children would not be affected.

Negative effects might occur, but not necessarily.

A coincidence is a decisive factor determining the baby's health. Others believed that the mother's lifestyle has no/little influence on the offspring's health. They believed in an adverse impact of many often scientifically unrelated factors and claimed that if coincidence plays an important role, quitting is irrational:

I know many families with disabled children. Most of them are non-smokers, they rarely drink alcohol.... Most disorders are of unknown origin. Many factors overlap here, plus some bad luck, or God's doing.

Quitting smoking in the last stages of pregnancy is pointless. Women believed that at this point, it was impossible to reverse the possible harm that could have been done to the foetus since its conception. In other words, quitting will have positive effects if it happens before getting pregnant:

I'm 25 weeks pregnant....It won't make much difference if I quit now. There are already toxins in my body and it would take some time to get rid of them, about half a year.

Quitting smoking is futile in the context of human exposure to numerous harmful elements. Some mothers had an overgeneralized feeling of being exposed to many health hazards (i.e. environmental hazards). They saw no logical explanation for quitting smoking if other threats could still harm the foetus:

Even fruits bought in stores contain so many chemicals and other rubbish. Should we give it all up during pregnancy? Smoking is said to cause cancer. What doesn't cause cancer? Everything does!

Any mistake can be compensated for by the love offered to the child. The women believed that fostering positive relationships with their offspring and providing them with love

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and care would compensate for the harmful effects of smoking during pregnancy:

A friend smoked during pregnancy and gave birth to healthy twins. What's important is that they're loved and taken care of. Even a horrible stench won't bother a child if it's loved.

Pregnancy is not the time for a woman to take special care of herself. Mothers doubted that during pregnancy they needed to pay more attention to their own health. They continued living their current lifestyle, believing it might be better for their offspring:

I smoke .... Most people are critical of it, but let's not go to extremes. After all, someone once said, 'Pregnancy isn't an illness.'

Smoking permissivism stemmed from the fact that other pregnant women smoke. Realizing that other mothers face similar problems released some smokers from the obligation to quit. In this way, they mollified the feelings of guilt and comforted themselves:

My case will make you feel better. It's egoistic, but I felt a little better for a moment when I saw other women having the same problem. I've been smoking all pregnancy.

Smoking during pregnancy is accepted by health professionals. A common lay justification referred to the medical staff's advice. Expectant mothers claimed that the professionals recommend that the following: heavily addicted women should smoke an occasional cigarette because quitting might be detrimental; those in advanced pregnancy can smoke because it is already too late to reverse the consequences of smoking on the foetus; those who have unsuccessfully tried to quit several times should make peace with their addiction:

I smoke half a cigarette every 3-5 days. The obgyn says that if I can't do anything about it, I've to come to terms with it.

Some pregnant women overinterpreted the recommendations on gradual withdrawal to their advantage. They believed that switching to 'light cigarettes' without reducing the number of cigarettes or enjoying an occasional cigarette throughout the pregnancy would be a sufficient change:

A friend smoked a little for the whole pregnancy. She claims her doctor told her that quitting suddenly was a bad idea.

Altering the smoking style means breaking the addition. Those who diminished smoking considerably sometimes regarded themselves as ex-smokers. In their opinion, sporadic (though in some cases from the objective point of view often) smoking indicated handling the addiction:

I quit on August 13, but sometimes I smoke 1–2 cigs a day.

Denying being pregnant. To continue smoking without compunction, some expectant mothers, purposefully or subconsciously, did not want to acknowledge their pregnancy:

When I started suspecting that I was pregnant, I soon forgot about it and I gave in to temptations.

Beliefs questioning the possibility to give up smoking and exaggerating the barriers to achieve so

Magnitude of stressful situations in everyday life. A common barrier that women believed prevented them from quitting was both temporary and permanent stress stemming from daily life problems. Smoking became a spontaneous, involuntary reaction to single motherhood, financial troubles, quarrels with somebody, etc:

A fight with my partner or really anything else happens and I get this adrenaline rush that makes me feel like smoking.

Additional stress connected with pregnancy. Some mothers explained that smoking mollifies stress specific to many pregnant women regardless of their smoking status, e.g. the stress induced by realization of pregnancy or by the approaching labour:

I'd been smoking a bit since the 8th month of pregnancy because I feared going through the delivery.

The stress caused by the awareness of harming the foetus while smoking. A strong desire to quit combined with the anticipation of failure augmented the stress resulting from the awareness of smoking consequences. Unable to handle the emotions in an effective way, women resorted to behavioural stress management, namely smoking. Thus, they involuntarily fell into a vicious circle:

The awareness of hurting our own children, that we must quit, makes me even more fidgety, so I smoke more.

Negative emotions stirred by the societal pressure to quit smoking during pregnancy. Some women claimed that society's reactions are a source of such unpleasant feelings that to mollify their feelings, they resort to smoking:

I was so depressed from being told off for smoking during pregnancy that I smoked even more.

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A need to rebel against the societal pressure imposed on expectant mothers to combat the addition. Other women purposefully smoked to fight against such social attitudes and to manifest their protest and independence:

> I smoked until the very end of pregnancy. I knew I shouldn't have, but the constant nagging from other people made me deliberately reach for a ciggy.

Lack of social support to refrain from smoking. Some women did not quit due to lack of people who would aid them in this process by quitting together, constantly reinforcing the harmfulness of smoking or pressuring the women to stop smoking:

> I'm not showing yet, so I don't get the disapproving looks. It'd be easier to quit then.

Smoking by the members of the closest environment. The mothers claimed that the presence of smokers around them prevented them from quitting. The women felt obligated to smoke due to deeply rooted patterns of behaviour, the smell of smoke and accessibility of cigarettes:

> At university, everybody smokes. Even when I didn't buy cigarettes, somebody offered and shared a ciggy.

Unwillingness to give up on personal benefits stemming from smoking. For some women, smoking was a deeply rooted everyday routine and the most important way to build/sustain social relations and manage boredom; therefore, they refused to forgo these advantages:

> I feel like smoking when I'm bored.

Fear of experiencing the unpleasant side effects of breaking the addiction. Some smokers were afraid that quitting would negatively affect their biology (which could result in gaining weight, suffering headaches and stomach problems) or emotions (like increased anxiety or despondency):

> I fear I might put on some weight.

Lack of physiological reactions typical for pregnancy that facilitate an aversion to cigarettes. Some mothers explained that during the first trimester, they did not experience the oversensitivity to smells, altered taste, or morning sickness that normally cause a reluctance to smoke:

> I wish that at the beginning of the pregnancy smoking had made me hurl. It would've been easier to quit.

The specificity of pregnancy that makes breaking the addiction an enormous challenge. Others believed they could not quit due to some characteristics of pregnancy (e.g. hormonal changes, mood swings, cravings to smoke) or a ban to use any pharmacological treatments of addiction:

> It's more difficult to quit in pregnancy because women shouldn't use nicotine gum/patches. There's also the emotional rollercoaster.

Lack of an effective method to break the nicotine addiction. Some pregnant women complained about the ineffectiveness of specific ways to quit; others claimed that they had already unsuccessfully tried everything:

> I like cigarettes even though I chew the gum.

Unawareness of the techniques to quit smoking. Smoking women blamed their lack of knowledge of the steps required to quit smoking. Even those who listed some methods of quitting refrained from using them and they justified this by not understanding exactly how the methods work:

> I want to quit, but I really don't know how to go about it.

Fear of the safety of using a particular method for quitting smoking during pregnancy. Women were afraid of the side effects of some ways of breaking the addiction, especially the non-conventional ones:

> My doctor recommended hypnosis. I didn't go because I'm afraid of it.

Lack of unequivocal guidelines for pregnant women to break the addiction. Some mothers justified the behaviour by feeling confused by the contradictory information on refraining from smoking during pregnancy (i.e. if they should quit gradually or suddenly, or in case of heavily addicted women, if they should quit altogether or smoke sporadically):

> Some doctors recommend quitting, while others say that if you smoke during the pregnancy as much as you did before, it's better not to quit because it may be more dangerous than smoking.

Being weak-willed to break the addiction. For some smokers, this belief stemmed from having failed to quit several times. They were depressed by the defeat. Others used this as a simple excuse for not making any attempts to quit:

> It'd be good to quit, but I don't have the strong will for it.

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Being too heavily addicted to quit. This belief is similar to the previous one in that for some women, it was rooted in numerous negative experiences in giving up smoking, whereas for others, it was an excuse masking the necessity to quit during pregnancy:

On the way to the delivery room, I chain-smoked three cigarettes. It's the power of the addiction; you can't break it and you ignore the consequences.

Being predestined to smoke. Pregnant women blamed their addiction on destiny. In their opinion, destiny is one of many (in addition to, e.g., the power of the addiction, social environment and stressful situations) uncontrollable barriers that make quitting impossible:

Some people are predestined to smoke.

Discussion

The article presents a typology of women's lay justifications for smoking during pregnancy identified through a thematic analysis of their entries on three parenthood forums. Some new knowledge has emerged from the study. First, according to the authors' best knowledge, this work is the first qualitative, unobtrusive research on pregnant women's lay justifications for smoking. Thus, its results are not affected by the researchers. Second, to the authors' best knowledge, the article is the first qualitative study of smoking pregnant women that focuses on their thought patterns in an attempt to determine the broadest spectrum of subjective reasons for smoking during pregnancy. Literature reviews presenting other scientific qualitative analyses of the target group in question (Ebert & Fahy 2007, Ingall & Cropley 2010, Flemming *et al.* 2013) show a relatively high number of subjective barriers to abstaining from smoking; nevertheless, in contrast to the present article, those studies present few beliefs that question the need to and the positive effects of quitting smoking.

The present research identifies the many ways mothers diminish the feeling of risk resulting from smoking (justifications included in the first main theme); this is important in the light of the observations made in the analysis of the Polish forums as well as other authors' studies (Haslam *et al.* 1997, Tod 2003, Ingall & Cropley 2010), which show that the women's awareness of the negative effects of smoking on the health of the foetus does not motivate them to quit. The ability to list potential threats does not infer a belief that they are realistic. The conviction of smoking pregnant women concerning the possibility of negative consequences of maternal smoking is lower than that of other expectant mothers (Haslam & Draper 2000, Zukiewicz-Sobczak & Paprzycki 2013). This finding might be indicative of the high effectiveness of lay justifications in the process of reducing cognitive dissonance.

Moreover, the research shown in the present article depicts an issue that has been mentioned by few authors (e.g. Hotham *et al.* 2002, Hammer & Inglin 2014): namely, some women build their subjective justifications based on the medical professionals' authority. Nevertheless, in this study, it was impossible to verify in each analysed post if the women had in fact been given such advice from a professional, or whether they had made it up. Additionally, if the women did receive such advice, it was nearly impossible to determine in each case whether the advice was quoted or instead overinterpreted. However, in a few posts, it was clearly noticeable that the advice was overinterpreted. The issue of free interpretation of medical professionals' advice has been discussed by few authors to date (Nichter *et al.* 2007).

In the context of the applicability of the present article in nurses' and midwives' work, it should be mentioned that some of the subjective justifications noted in other authors' qualitative research did not appear on the analysed Polish forums. These justifications include the following: the young age characterized by irresponsible behaviour (Abrahamsson *et al.* 2005); a limited accessibility to and quality of anti-tobacco counselling (Hotham *et al.* 2002, McCurry *et al.* 2002, Tod 2003, Abrahamsson *et al.* 2005, Ebert & Fahy 2007); a fear of restarting the addiction, which is related to an increased number of cigarettes smoked per day (Hotham *et al.* 2002); the social pressure to regain the body shape from before pregnancy (Ebert & Fahy 2007); and a woman's belief in the following advantages of smoking: protecting the baby because smoking mollifies the mothers' negative emotions, which could be taken out on the offspring (Graham 1976), having a smaller baby, which facilitates an easier delivery (Lawson 1994, Hotham *et al.* 2002), or reducing appetite, which helps control body mass and saves money spent on food, which is of particular importance to mothers from a lower economic background (Tod 2003).

Limitations

The research material and the techniques used in its collection generate a risk that the presented themes of lay justifications are not exhaustive. First, there may have been an insufficient number of analysed forums. Second, the women actively partaking in this form of communication might share a certain

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characteristic and thus might have a different set of lay justifications than the majority of smoking pregnant women. Third, various research studies pinpoint a significant difference in the accessibility to and use of the internet depending on socioeconomic status (Australian Bureau of Statistics 2006, Czapinski & Panek 2013, Dutton & Blank 2013, Pew Research Centre 2014). There exists a risk that women with a low income and education are not members of such forums in the same proportion as women from other social groups; as a result, a full spectrum of their lay justifications might not have been accounted for. However, the risk is partly negated by the fact that virtually all young people use the internet and procreative age people do so more often than older people.

Conclusion

It is generally assumed that for adults, the biggest obstacles preventing people from refraining from smoking are psychophysiological dependence mechanisms and some cognitive elements (knowledge, beliefs about smoking). The thought patterns of smoking pregnant women expressed in their lay justifications lead the authors to the following conclusions concerning the reasons for the low effectiveness of narrow, one-track, anti-tobacco education (limited to presenting information about the harmfulness of the addiction in question). The findings delineate recommendations for nurses' and midwives' work in the area of influencing the cognitive conditions related to the continuation of smoking. The essence of the change required in current practice involves altering it into a dialogue with patients that aims to recognize and work on their specific justifications, which will augment their personal motivation to alter their behaviour.

First, the present research illustrates why some pregnant women contest medically based recommendations to refrain from smoking that make references to the health gains from quitting. Four explanations are presented below:

- Education about the harmfulness of the addiction runs contrary to the women's deeply rooted counterarguments. Their strongest justifications are based on personal experiences (i.e. having delivered a healthy baby in a previous pregnancy during which they smoked).
- The recommendations based on the detrimental effects of smoking are in conflict with the balance of personal gains and dangers resulting from this behaviour. Some women believe that the advantages (i.e. handling stress, maintaining social relationships, or avoiding the withdrawal syndromes) outnumber the dangers of smoking (which are often postponed or doubted by the women).
- The mothers believe that the warnings about the consequences of smoking do not apply to them. This might result from the denial that they are pregnant, from a belief that it is safe to smoke during a particular trimester, or from a conviction that they do not harm the offspring because they have almost broken the addiction.
- The women are unwilling to make an attempt to quit smoking and/or do not believe in the success of this effort. They present a plethora of barriers to nicotine abstinence that they believe are beyond their control (i.e. their destiny to smoke or the specificity of pregnancy making quitting impossible).

Second, the reason for the low effectiveness of a narrow, one-track education is that some women tend to overinterpret medical recommendations to sanction their addition. A discussion with the patient would enable healthcare providers to verify whether the advice is properly understood.

Third, the women explain their behaviour by a disorientation caused by the inconsistent advice concerning breaking the addiction during pregnancy. Therefore, it is important for professionals to identify and clarify the incongruities perceived by the patients.

Fourth, the mothers express varying responses to the social pressure to stop smoking during pregnancy. The first group of women views social pressure negatively. This group consists of those who claim that they smoke cigarettes to manifest their independence and rebel against various limitations and those who justify smoking by the need to mollify stress resulting from the social pressure. These women's responses might lead to an even stronger addiction. Conversely, the second group expects social pressure to help them quit smoking during pregnancy. They believe that the absence of social pressure (i.e. the lack of constant reminders about the harmfulness of smoking) should be blamed for their continued addiction.

Fifth, some smoking pregnant women justify their action by the need to mollify the stress caused by the knowledge of harming the baby and the failure to quit. In their case, the strong social pressure to refrain from smoking combined with an attempt to motivate women to quit smoking through education on the harmfulness of smoking might lead to victim blaming, strengthening a vicious circle and finally enhancing their addiction. The two aforementioned conclusions clearly pinpoint that during every dialogue with pregnant patient who smokes, there exists a need to recog-

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nize each patient's thought pattern; this will allow the professional to find an adequate balance between a persuasive and non-judging message for each patient, which will augment her motivation to break the addiction instead of generating a feeling of stigmatization (Baxter *et al.* 2010).

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Author contributions

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- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site.

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