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“Smoking Does Not Go With Yoga:” A Qualitative Study of Women’s Phenomenological Perceptions During Yoga and Smoking Cessation

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Abstract

Introduction: Smoking cessation is often accompanied by withdrawal symptoms, cigarette craving, increased negative affect, and increased experience of stress. Because yoga has been shown to reduce stress and negative affect, it may be an effective aid to smoking cessation. The objective of this study was to examine women’s phenomenological experiences of vinyasa yoga as part of a smoking cessation program.

Methods: Focus groups were conducted post-intervention with women ($n = 20$) who participated in a pilot randomized controlled trial of yoga as a complementary therapy for smoking cessation. The 8-week vinyasa yoga intervention included twice weekly 60-minute classes that involved breathing exercises, postures (asanas), and relaxation techniques. Focus groups were audio recorded and transcribed. Thematic analysis focused on descriptions of yoga, breathing, and bodily sensations including cigarette craving.

Results: Focus group participants described vinyasa yoga as physically challenging. Most reported deliberate use of yogic breathing to cope with cigarette craving and stress. Other perceived effects included relaxation and an increased sense of body awareness and wellbeing.

Conclusions: Participants viewed yoga as positive and potentially helpful for quitting smoking. Yoga may be an effective adjunct for smoking cessation.

Keywords

smoking cessation; mindfulness; vinyasa yoga; qualitative research

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Introduction

According to the National Health Interview Survey, about 1 in 6 adult women are current cigarette smokers (CDC, 2012). Women who smoke are at high risk of cancer, heart disease, lung disease, stroke, and other diseases (Mackay & Amos, 2003; Perkins, 2001). More than 70% of women smokers want to quit and 54% have made a serious quit attempt (>24 hours) in the past year (CDC, 2011). However, each year only 6% of all smokers quit successfully (CDC, 2011). Some evidence suggests that women may have greater difficulty quitting and may be more likely to relapse than men (Piper et al., 2010; Reynoso, Susabda, & Cepeda-Benito, 2005).

Negative affect, stress, and cigarette cravings can deter smoking cessation efforts and lead to relapse (Kassel, Stroud, & Paronis, 2003; Schnoll, Patterson, & Lerman, 2007). Smoking is frequently used as a coping mechanism to prevent or alleviate negative affect, including feelings of anxiety and depression (Copeland, 2003; Scheitrum & Akillas, 2002). Stress and negative affect have been shown to reduce motivation to quit and are predictive of relapse (Guirguis et al., 2010; Kenford et al., 2002; Killen, Fortmann, Varady, & Kraemer, 2002; Manning, Catley, Harris, Mayo, & Ahluwalia, 2005; Shiffman & Waters, 2004). Craving for cigarettes and withdrawal symptoms, including anxiety, increase the risk of relapse (al'Absi, Hatsukami, Davis, & Wittmers, 2004). Therefore, interventions that focus on methods to cope with cigarette cravings, negative affect, and stress could improve women's ability to quit and remain quit.

Exercise has been shown to improve coping with withdrawal symptoms, including cigarette cravings and negative affect (Haasova et al., 2013; Linke, Ciccolo, Ussher, & Marcus, 2013; Roberts, Maddison, Simpson, Bullen, & Prapavessis, 2012; Taylor, Ussher, & Faulkner, 2007). Smoking cessation programs that include traditional aerobic exercise like walking or biking have shown high cessation rates at the end of treatment (Marcus et al., 2005; Ussher, Taylor, & Faulkner, 2008, 2012). However, adherence to exercise programs is low (Whiteley et al., 2012), which limits its potential impact on women's long-term smoking abstinence (Ussher et al., 2012).

Yoga, an alternative to traditional aerobic exercise, is gaining popularity in the United States (Birdee et al., 2008; Bussing, Michalsen, Khalsa, Telles, & Sherman, 2012; Clarke, Black, Stussman, Barnes, & Nahin, 2015; Tindle, Davis, Phillips, & Eisenberg, 2005). Yoga practice involves breathing exercises, asanas (postures), meditation, and relaxation techniques. Similar to aerobic exercise, yoga practice has been associated with improvements in physical fitness, strength, and flexibility (Tran, Holly, Lashbrook, & Amsterdam, 2001). Yoga has also been associated with improvements in stress symptoms, anxiety, and mood (Li & Goldsmith, 2012; Rocha et al., 2012; Vadiraja et al., 2009). Further, the mindfulness aspect of yoga may be of special relevance to smokers who are trying to quit. The breathing exercises and focusing techniques used in yoga are designed to increase practitioners' attention to body sensations and present moment experiences, which are a core component of mindfulness. "Mindfulness" is described as a state of being nonjudgmental and attentive to one's moment-to-moment experiences (Brown & Ryan, 2003; Kabat-Zinn, 2003). Mindfulness training creates self-awareness and an ability to skillfully respond to

mental processes that contribute to emotional distress, leading to increased control over one's behavior (Shapiro, Carlson, Astin, & Freedman, 2006; Vago & Silbersweig, 2012). Yoga may be a useful complement to smoking cessation by increasing mindfulness. Few quantitative studies (Elibero, Janse Van Rensburg, & Drobles, 2011; Mc Iver, O'Halloran, & McGartland, 2004; Shahab, Sarkar, & West, 2013), including our own pilot study (Bock et al., 2012), have reported the potential of yoga in reducing craving and also increasing quit rates. However, quantitative surveys are limited in their ability to fully capture the benefits or issues related to yoga practice. Qualitative examination allows the exploration of participant experience and identification of novel themes. Therefore, the purpose of this qualitative study was to gain understanding of the acceptability of yoga and experiential perspectives of women participating in a yoga intervention for smoking cessation.

Methods

Study Design

This qualitative study was conducted to understand smokers' experiences of yoga. Participants were part of *Quitting-in-Balance*, a two-arm randomized controlled trial that examined the role of yoga as a complementary therapy for smoking cessation. This 8-week parent study involved one hour per week of Cognitive Behavioral Therapy (CBT) for smoking cessation plus either a yoga program (*yoga*) or a health and wellness program as a contact control (*wellness*). Groups of 8–10 women were enrolled and randomized into the yoga or wellness groups in parallel, sequential cohorts. Group smoking treatment was conducted separately for those in the yoga and wellness groups. Focus groups were conducted with participants in the yoga group at the end of treatment (week 8). The methods, baseline, and final quantitative outcomes for this trial are presented elsewhere (Bock et al., 2012; Bock et al., 2010). This paper reports on the qualitative focus group data collected from the yoga participants.

Participant Recruitment for Parent Study

Interested women 18 years and older were screened for eligibility. Women were excluded if they reported smoking fewer than five cigarettes daily, participated in relatively healthy levels of weekly physical activity (> 3 days of moderate-intensity or > 2 days of vigorous-intensity physical activity), or reported currently practicing yoga. Women were also excluded if they had a current diagnosis of heart disease, lung disease, or orthopedic conditions that could make participation in yoga difficult or dangerous, or if they reported current treatment for psychiatric illness or use of illegal substances. We used the Physical Activity Readiness Questionnaire to screen for safe physical activity participation (Thomas, Reading, & Shephard, 1992). Eligible women were invited to attend an orientation session where the study was described in more detail and to provide written informed consent. The Institutional Review Board of The Miriam Hospital approved all study procedures and materials.

Study Procedures

Participants attended a once-weekly smoking cessation class and twice-weekly yoga or wellness classes for 8 weeks. The CBT smoking cessation program was led by a

psychologist with 10+ years of experience in smoking cessation counseling. Each one-hour session was conducted in a group format. This program has been used successfully in our previous studies (Marcus et al., 1999; Marcus et al., 2005; Marcus et al., 2003). Topics included self-monitoring, stress management, coping with high-risk situations and weight management while quitting smoking. We did not provide nicotine replacement therapy or other medications; however, participants were allowed to use them during the program.

Certified vinyasa instructors taught all yoga classes. Vinyasa is a form of Hatha yoga in which yoga postures (asanas) are linked by continuous flowing movements synchronized with breath. Classes included postures that can be practiced by sedentary women with no prior experience of yoga. Instructors demonstrated each posture and provided encouragement and positive affirmations. Each one-hour class consisted of approximately 45–55 minutes of breathing linked with asanas and 5–10 minutes of meditation and guided relaxation (shavasana). The yoga sessions emphasized mindfulness (staying focused on breath and body awareness) and a meditative state (calming the mind and instilling feelings of wellbeing and acceptance).

Qualitative Methods

We conducted focus groups at the end of treatment to explore participants' experiences with yoga practice generally and their perceptions of the effect of yoga on their smoking and quitting experiences specifically. A qualitative data collection guide was used to cover important topics in the focus group (see Table 1) and to ensure that the same topics were covered in each group. A trained investigator with over 10 years of experience in qualitative research, whom the participants had not previously met, facilitated the discussion. Each group lasted about two hours, was audio recorded, transcribed verbatim, and then de-identified by study research assistants.

All sections of each transcript were independently coded by two analysts. Coding was then reviewed for accuracy and completeness. The codes were inductively derived and focused specifically on the phenomenological or bodily experiences participants described. Coded transcripts were entered into NVivo10 qualitative data analysis software (QSR, 2012) for thematic analysis.

Results

Yoga Focus Group Participants

Of the 55 women enrolled in the parent study, 32 were randomized into the yoga condition. However, 12 were unable to attend the focus group. Four focus groups were held between November 2007 and July 2008; the number of participants in each group ranged from four to six. The mean age of focus group participants ($n = 20$) was 42.7 years ($SD = 10.7$; range = 23–63). The majority ($n = 19$) was White; one participant was African-American. Nearly one-third of participants were college graduates (30%), 35% had attended some college, 25% had high school diplomas, and none had any previous experience with yoga. On average, women reported smoking 17.9 cigarettes/day ($SD = 8.3$, range = 5–40) at baseline.

Themes from the qualitative analysis.

Thematic analysis (Braun & Clarke, 2006; Guest, MacQueen, & Namey, 2011) focused on descriptions of yoga as exercise, breathing, and bodily sensations—including craving—and the language participants used to describe those experiences. This was a mostly yoga-naïve group of individuals who were not currently exercising; therefore, we explored participants' response to yoga in general, as well as the effect of yoga practice on their smoking and quitting experiences. Codes developed for this analysis included the following (these are not exclusive categories; multiple codes were applied to the same passage of text whenever relevant):

- Impressions of yoga
 - Physical experiences during yoga
 - Experiences of yoga as exercise (included discussions of yoga as different from other exercise forms)
 - Spiritual experiences during yoga
 - Yoga and stress
 - Yoga is calming
- Specific phenomenological experiences
 - Expressions of increased awareness or “mindfulness”
 - Changes in the body (more energy; feeling different, etc.)
- Yoga during smoking cessation
 - Yoga and craving
 - Yoga and smoking
 - Smoking and yoga do not go together
- Descriptions of breathing

When all of the transcripts had been coded, all of the comments at each code were read in aggregate and summarized. Based on that aggregated reading, we created a table that identified 1) important themes, 2) key concepts within each theme, and 3) direct quotes that illustrated those concepts.

Acceptability of Yoga

Perceptions of yoga.—Yoga was a novel form of exercise for these women. Their comments indicated that many found vinyasa yoga to be physically challenging. Participants reported that they exerted themselves by stretching, deep breathing, and “working hard.” They reported that the yoga practice made them sweat and said they noticed an increase in their heart rate. Some reported muscle soreness; others reported that yoga provided relief from prior muscular pain: *“I’ll tell you, I have aches and pains and when I came here... I had aches and pains, but when I finished the yoga, that night my muscles felt better. They really did”* [participant #3].

Another participant described her experience, which included awareness of her breathing and increased agility: *“I was not a regular exerciser, so I realized just how neglected my body was. And the breathing, it just made me realize, ‘wow, breathing!’ It was just a real awakening. I loved it. I loved the yoga. And as I’ve progressed, I’ve become so much more agile and really want to continue with the yoga”*[participant #19].

Body awareness and phenomenological experiences.—Yoga affected participants’ awareness of and attention to their bodies. They often used the language of mindful awareness in descriptions of their yoga experiences. For example, this participant described the lessons she learned from yoga: *“Be in the moment. Realize—like don’t push things aside. Acknowledge things and let it go”*[participant #8]. Another commented, *“Just learning how to calm yourself down and just be in the present moment. That was huge for me”*[participant #16].

Participants reported a variety of experiences as a result of yoga including having more energy, generally feeling better, being more limber, and improved sleep quality. Many indicated that they found yoga different than other forms of exercise because it also provided relaxation, calmness, an increased sense of wellbeing, and an increased awareness of being healthy following yoga: *“Awareness of the body is sacred, almost. And when you smoke, it poisons it. So, I mean, [yoga] just gives you a lot of bodily awareness... it really does make you just more cognizant of being healthy”*[participant #16].

The concept of “awareness” has multiple meanings and the facilitator was careful to clarify the term, as this exchange reveals:

Participant: And [yoga] also makes you aware...

Facilitator: Aware in a spiritual way or aware...?

Participant: No, no, aware physically, more physically of your body, of your breathing, of when you smoke it makes you dizzy. [Participant ID assignment not clear; multiple voices at once]

Breath and breathing.—The focus on breathing was often identified as a key part of the yoga experience. Many participants said the program made them newly aware of their breathing, both in relation to smoking and overall. Participants said they became aware that they had not been breathing effectively and that they learned to breathe properly during yoga class. They reported using focused breathing not only while doing yoga, but also in times of stress and during cigarette cravings (see below).

Experiences of Yoga in the Specific Context of Smoking Cessation

Several participants reported that yoga made them more aware of how their smoking affects their body. However, this increased awareness did not always assist with smoking cessation: *“The yoga... helped me become more in tune with my body, and how it works, and the breathing. But it didn’t really help with my relationship with my cigarettes”*[participant #19]. Several participants who did not quit reported that even though they were continuing

to smoke, they were deliberately smoking their cigarettes differently, making an effort to consciously inhale the cigarette smoke less deeply.

Some reported that smoking made the breathing exercises done during yoga class harder and that pranayama became easier after they quit. Others reported learning that their smoking affected how they breathed when they were inhaling cigarettes as well as when they were not: *“I never realized I wasn’t breathing properly. Just being a smoker, I learned that you take in short breaths. You’re almost gasping for air but you don’t realize it. [The yoga instructor] showed the proper way of breathing and how to expand your lungs and take it in; you’re also exercising, stretching everything. I fell in love instantly and I still do it”* [participant #5].

Yoga strategies used during smoking cessation.—Participants reported explicitly using yoga, mindfulness, and breathing to cope with nicotine cravings and to avoid smoking. They also frequently described using breathing techniques, particularly deep breathing, when trying to relax, when feeling stressed, as a substitute for cigarettes and/or when craving nicotine. For example, this participant described a shift in how she copes with stress; she no longer uses cigarettes and is mindful instead: *“[in the past] if something stressed me out, I would avoid it. I’d go smoke until I felt better and then come [back] to it [i.e., the stressor]. So now I’m not avoiding it anymore. I’m facing it head on, embracing the pain and the goal and whatever, having a good cry if I have to, stomping my feet if I have to. But, you know, I’m dealing with it then and there”* [participant #7]. Many participants reported using breathing to deal with the urge to smoke: *“When you want a cigarette, you start doing the breathing. It kind of brings you down, calms you down, and takes that urge away. It’s like a deep cleansing breath. It literally will subside that urge”* [participant #14]. *“I find it also kind of energizing too. Once you do the breathing, and alright, the craving’s passed, and then you just feel really good. You’re energized”* [participant #8].

“Smoking does not go with yoga.”—Some participants suggested that smoking and yoga simply do not go together. *“When I would leave [yoga], I wouldn’t want to smoke, because those cleansing breaths for that hour felt so, like ‘wow!’ I didn’t even want to put pollution in me because it made me so aware of my physical being”* [participant #19]. Another participant said that the deep breathing during yoga practice was incompatible with smoking:

Participant #3: And it also makes you aware, you wouldn’t think you would work up a sweat, but believe me, you do, by the end of the hour. If you had—like one night I had smoked one that day, there was something going on, I was stressed. Well, I could feel that.

Facilitator: You could feel it when you did the yoga?

Participant #3: Yes.

Facilitator: How so?

Participant #3: I could feel it. Get dizzy.

Facilitator: Really?

Participant #3: Yeah. You get tired easier.

Facilitator: And you could feel that?

Participant #3: Oh yeah... Definitely... You got all that smoke in there, then it's like...

Facilitator: Harder to do that?

Participant #3: Then you've got to bend over and put your head down. If you smoked before you came [to yoga] it's like [you] get dizzy.

Finally, some comments reflected the sense that smoking and yoga are opposites: *"Smoking does not go with yoga... Yoga's all about health and appreciation of feeling healthy and being healthy, and smoking is the exact opposite. And smoking induces, in me anyway, a lot of guilt and shame about what I'm doing to myself, which sometimes, when I'm feeling really guilty, I smoke more. It's like a trigger in itself. The yoga gives you a positive peace as a sort of weapon against the lousy attitude you have about yourself because you're a smoker... it's a whole thought and feeling process"* [Participant #20].

Discussion

This qualitative examination explored the phenomenological experiences of women participating in yoga as a complementary therapy for smoking cessation. Participants reported an overall satisfaction with the yoga intervention and also cited positive physical and emotional benefits due to their yoga practice. Their comments suggested that yoga was a positive part of the smoking cessation process for most, though not all, participants.

In describing their yoga experience, we found that participants discussed focused breathing and experiences with the breath more than the yoga postures. The vinyasa style of yoga used in this study emphasizes the coordination of breath and movement, and breathing is timed to the flowing movement from one posture to another. It is also an independent element; specific breathing patterns in which participants focus solely on their breath are taught when seated, without movement. While participants reported physical benefits from yoga postures, such as increased agility and relief from muscular pains, the attention to breathing in these data suggests that breathing was particularly relevant to these individuals; perhaps because they were trying to quit smoking, a habit in which drug is delivered to the body through breath.

The deep and slow breathing pattern during yoga practice has been associated with favorable respiratory changes including improved oxygen saturation (Mason et al., 2013; Pomidori, Campigotto, Amatya, Bernardi, & Cogo, 2009) and respiratory function in previous studies (Cebria, Arnall, Igual Camacho, & Tomas, 2013; Santaella et al., 2011; Santana et al., 2013). The current study did not capture any objective measure of lung function; however, our focus group data suggested that the breathing techniques learned during yoga were important. Participants reported integrating breathing techniques more than yoga postures into their quitting process, using breathing to calm their minds and distract themselves from

craving sensations. This finding raises the question of whether breathing techniques and mindfulness training alone would be sufficient for smoking cessation. Other than increased body flexibility, the benefit of postures for smoking cessation is not clear. Further investigation is needed to examine the benefits of these individual components of yoga.

Some participants reported being more aware or more mindful by the end of the 8-week program. Others talked about learning to acknowledge their thoughts and let them go, about being in the present moment, or about attending to sensation. Mindfulness is generally described as a particular way of paying attention, characterized by intentional, non-judgmental observation of present moment experiences, including bodily sensations, feelings, thoughts, and external stimuli from the environment (Baer, 2003; Grossman, Niemann, Schmidt, & Walach, 2004; Kabat-Zinn, 1994). Participants said yoga made them aware of their body sensations and the effect of smoking upon their body. During yoga practice, the focus on breath and body movements helps to center the self in the present moment. This present-moment awareness and meditation practice resonates with the mindfulness-based strategies (Khanna & Greeson, 2013) that our study participants had experienced.

Learning to appreciate the present moment and focus on the current situation appeared to be a useful strategy for some participants when coping with feelings of stress and craving during quitting. Previous mindfulness-based interventions for smoking cessation have shown similar benefits (Brewer et al., 2011; Davis, Fleming, Bonus, & Baker, 2007; Elwafi, Witkiewitz, Mallik, Thornhill, & Brewer, 2013; Westbrook et al., 2013).

Participants identified two reasons why “*Smoking does not go with yoga*” [participant #20]: 1) smoking before a class made it physically more difficult to practice yoga; 2) practicing yoga was seen as a positive health behavior and smoking as the exact opposite: an unhealthy behavior. These two reasons, articulated by the smokers enrolled in the intervention and not by the researchers, provide participants’ perspective for why yoga may be an effective adjunct treatment to smoking cessation treatment.

To our knowledge, this is the first study that qualitatively captured perceptions of yoga practice among women attempting to quit smoking. Breathing and increased awareness were particularly useful to cope with stress and cigarette cravings. These themes indicate potential mechanisms that may explain the role of yoga in smoking cessation. However, these experiences need to be tested in large-scale clinical trials.

There are limitations of this study that need consideration. The small sample size of this formative qualitative study limits making firm conclusions. Not all participants in the yoga condition attended the focus group. While scheduling conflict was the common reason for non-attendance, it is possible that those with positive experiences were more motivated to attend and share their experiences. Also, it is not known if their responses were based on any preconceived notions about yoga. For example, a belief that yoga is relaxing may make people feel relaxed. The challenge with these qualitative findings is to uncouple attitudes about what yoga is or does with what actually was experienced.

This qualitative investigation was a pilot project conducted to inform an ongoing randomized controlled trial (RCT) investigating the efficacy of yoga as a complementary therapy for smoking cessation. The focus group data helped to establish acceptability of the yoga intervention and revise the protocol for the larger RCT. Although most participants enjoyed their yoga experience, many participants were not currently exercising and these participants were most likely to perceive the vinyasa style to be physically challenging. In response, our ongoing trial is using the Iyengar style of yoga. Iyengar Yoga involves slow movements where postures are held for some time before moving to the next posture. Compared to the faster paced, flowing postures of vinyasa, the Iyengar style is a light intensity activity (Ainsworth et al., 2011). Moreover, Iyengar Yoga involves the use of props that helps the practitioner to achieve and maintain postures with relative ease while reducing risk of injury.

The qualitative research team is particularly interested in understanding the perceptual process of doing yoga—both postures and breathing exercises—to better understand how these might affect the experience of quitting smoking, and whether certain experiences are more salient than others. Our continued research will address issues raised by these data and their analyses.

Conclusion

Participants reported that yoga improved their breathing, amplified the awareness of their bodies and breathing, and increased a sense of wellbeing. Participants used focused breathing techniques and relaxation skills taught during yoga to cope with stress and craving outside of class. Additionally, some endorsed the sentiment that yoga and smoking were opposites because the former is a positive action leading to an appreciation of feeling healthy and the latter is a negative behavior about which some women feel guilt or shame. Participants reported using “breathing effects” and “increased awareness” elements of yoga as strategies that allowed them to respond to stressful situations, cope with craving, and avoid smoking. Additional information is needed to further understand whether and how yoga acts as an effective complementary treatment for smoking cessation and to explore if different styles or components of yoga might have different effects.

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Table 1.

Focus group agenda.

1. Tell me what you thought of the yoga program.
a) Tell me about your first impressions of the program. What were your thoughts after the first yoga session?
2. How did you feel about the way the program was delivered?
a) Smoking cessation groups
b) Yoga sessions
(1) What about the poses and the flow of the yoga sessions did you like / dislike?
c) Schedule:
(1) Number of sessions
(2) Frequency of sessions
(3) Length of sessions
d) Facilitator
3. What got in the way or made it difficult for you to participate in yoga?
a) Physical or emotional demand: How was the intensity of the yoga sessions?
b) Concrete barriers: transportation; child care; scheduling around other events in life; illness
4. What would you change about the program?
a) Format
b) Probe on whether they want more/less yoga sessions; different kind of yoga
5. What would you keep the same?
6. How well did the yoga program fit with your life?
7. In what ways, if any, has the yoga program changed you?
a) How did the yoga sessions affect you physically and mentally during the program?
b) How did the yoga program affect your smoking, if at all? Describe.
(1) Your relationship with cigarettes
(i) How you FEEL about smoking?
(ii) What you THINK about smoking?
(iii) Urges to smoke: more/less frequency, more/less intensity (how about the urge to smoke immediately after group?)
(iv) Coping strategies?
(2) What about the program made it easier or harder for you to quit smoking?
(i) Being with your group-mates (i.e., everyone thinking about or trying to quit)
(ii) Being in a non-smoking environment for a little while each week
(iii) What else?
c) The way you think about health
d) Behaviors or habits
8. Do you plan to continue with yoga after today? Tell me about that.
9. What would you say to someone about the benefits of yoga for women quitting smoking?
a) What are the down sides of yoga for women quitting smoking?

10. Anything else we should consider as we re-invent the program?

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