

'And they slept happily ever after:
Online interpretive repertoires on the use of benzodiazepines and z-drugs'.

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Abstract

Drawing on a critical social-psychological framework for discourse analysis, data from a popular forum for people over 50 were analysed to study how the habitual use of benzodiazepines and Z-drugs (BZD/Z) is discursively negotiated by Flemish older adults. We present five different repertoires (risk and addiction; alternative pathways; suffering; rationalisation; cessation) that illustrate how a pharmaceutical imaginary of these medications is constructed online and how posters act as reflexive users taking on a health role. Most repertoires emerge from a tacit norm on the undesirability of medication use for sleeping problems. In the alternative pathways and cessation repertoires this norm is implicitly accepted by focussing on how to either prevent or overcome chronic use with various alternative solutions or through tapering off, while the risk and addiction repertoire is used to more openly defend and discursively magnify the idea that medication has to be avoided at all cost. We discuss how this reflects a prevailing imperative of health and ethos of healthicisation of sleep. The rationalisation and suffering repertoires on the other hand challenge this norm by defending medication use. We further explore how these repertoires are used to self-position as either 'noble non-user', 'deserving and/or compliant patient' or 'rational user', reflecting previously found moral positions in offline settings. Our data add another position that has thus far not been discussed extensively with regard to prescription medication use, namely that of a 'recovered user'. As such, this study shows how this particular online community is a site for contestation of health promotion and medical/pharmaceuticalised discourses on sleep by users and non-users alike and offers a unique insight into how people in the age group that is known to use most BZD/Z discursively negotiate the use of these medications in pseudonymised online interactions.

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Introduction and background

Use of benzodiazepines and Z-drugs in Belgium

It is estimated that in Belgium, one in every three users who starts benzodiazepines and Z-products (from here on referred to as BZD/Z) for sleeping problems, stress and anxiety, still takes these medications after eight years (Van Hulten et al., 2003; Christiaens et al., 2018). Long term, habitual use (more than four times a week for more than six months continuously) is not recommended due to adverse effects such as tolerance, physiological and psychological dependence and withdrawal and rebound symptoms, even when used in low and constant doses (Kurko et al., 2015; Soyka, 2017; Smith and Farrimond, 2019). With 12% of the adult Belgian population using a BZD/Z, the consumption of sleeping medication and sedatives in Belgium is widespread (Gisle et al., 2020). As such Belgium ranks indisputably high in international comparisons, and this despite several prevention campaigns launched by the Federal Government (see annex I). Generally, the use of BZD/Z increases with age, while there is also a remarkable peak in use around retirement age especially among men (Van de Straat et al., 2018). People within the age range of 50-59 just before retirement age have also been found to be more prone to sleeping problems than older cohorts (Van de Straat and Bracke, 2015) and tend to medicalise sleeping problems more (Van de Straat et al., 2018) especially if they need to engage in work-related responsibilities. BZD/Z usage is especially common among people over 75 with 37% of all women and 28% of all men using BZD/Z in this age group (Gisle et al., 2020).

'Doing health' online

The heterogeneous group of older adults -or people over 50- currently also forms the fastest growing group of Internet users in Flanders (Huisman et al., 2019). Digital activities such as searching and sharing health related information have increased steadily, especially in the age group between 50 and 65 (Huisman et al., 2020b). The increased sharing of medical(ised) information on the Internet and provision of support through online forums allow users to connect to peers in similar situations (Fox et al., 2005a, 2005b; Williams et al., 2008; Fixsen and Ridge, 2017; Lewis et al., 2018; Huisman et al., 2020a). Some BZD/Z users prefer online communication channels over seeking face-to-face help,

because of the anonymity, a reduced risk of social embarrassment, and an increased possibility to exert choice over what they say and with whom they interact (Fixsen and Ridge, 2017). In addition, the accessibility of such digital channels regardless of time and geography might also be particularly important for less mobile older adults.

Generally, online health communities offer a space for exchanging informational, emotional and social support (Nimrod, 2010; Nambisan, 2011; Kingod et al., 2017; Rueger et al., 2021; for an overview see Lupton 2016). Participants on these digital forums often act as expert health consumers who use online information to actively make individual choices about their health apart from the supervision of their physicians (Declercq et al., 2018). Furthermore, seeking and sharing information in online health forums 'promotes the individual expression of a personal experience of health' (Kivits, 2013: 222) or one's health identity (Fox and Ward, 2006; Armstrong et al., 2012). The act of consulting and actively participating has also been framed as indicative of individuals' awareness of their personal responsibility to health, thereby illustrating how the 'health role' - the imperative of opting for the right health choice, emerges in the digital realm (Shilling, 2002; Kivits, 2004). Online forums thus offer spaces where dominant health discourses and norms might be reproduced and challenged alike.

To date very little research has been conducted on how long term users understand and negotiate the habitual use of sleep medicines in a digital setting, with the exception of the work of Allison Fixsen and Damian Ridge (2017) who focussed on Anglo-Saxon online communities on BZD/Z cessation and the metaphors that are used to express the lived experience of withdrawal. Online forums thus open up new avenues for studying lay understandings of BZD/Z use.

In this paper we present results of a discourse analysis of online posts on BZD/Z use gathered from the most widely used online Flemish forum for people over 50 to analyse a) how the use of BZD/Z is discursively negotiated within this online community of mainly older adults - the age group that is known to use most BZD/Z- and b) how these forum participants' describe, justify or oppose the use of BZD/Z in online talk. The main aim is to explore the discursive backdrop that is formed in such online communities. Rather than assessing the validity of the information that is shared in this forum, we thus take on a contingent perspective (Lupton, 2016). We are particularly interested how the so-called pharmaceutical imaginary -which influences and shapes the consumption of BZD/Z- unfolds online and how this imaginary relates to broader societal moral discourses on the use of sleeping medication (Jenkins, 2012; Gabe et al., 2016).

As such our research aims to fill a gap in the emerging literature on the sociology of sleep and sleep medication.

Theoretical framework

We adopted a critical social-psychological framework (Wetherell and Potter, 1988; Potter, 1996; Potter, 2004; Goodman, 2017) for its focus on talk and text as social practice. This strand of discourse analysis is commonly applied to understand how language is used to create and enact health activities such as the use of medication for sleeping problems, as people make sense of their health choices by drawing on and reconstructing social representations that are embedded in everyday language (Starks and Brown Trinidad, 2007, Ceuterick and Vandebroek, 2017).

The main conceptual pillar within this type of discourse analysis is built around the notion of interpretative repertoires. Interpretative repertoires are recurrent discursive patterns and culturally coherent ways of talking about certain practices -in this case medication use-, drawn on to enable and legitimate those practices. Thus, interpretative repertoires are the discursive building blocks for constructing versions of medication use and health-related choices. Each repertoire contains a restricted range of stylistic and grammatical modes and is made up of a central set of recognizable themes, metaphors, commonplaces and tropes (Wetherell and Potter, 1988; Wetherell 1998; Wood and Kroger 2000; Goodman 2017). A repertoire enables those who rely on it to place their accounts of -their or others'- medication use in relation to socially normative ways of being. Repertoires -or in Wetherell's (1998: 400) words 'culturally familiar habitual lines of arguments'- have been explained to have a metaphorical 'off the shelf' character like books in a library that are known to all and publicly available to be borrowed when needed (Jolanki et al., 2000). Yet, just as library collections are not endless, there is no unlimited freedom of choice with regard to the repertoires that can be taken up, as these are governed by culturally available resources (Juhila, 2009).

Methodology

Online data collection

For this case-study data were gathered from the most popular and well-established Flemish website for 'active over-50s' and its open-access public forum. With nearly half a million unique visitors monthly and a history of 20 years (started in 2001) this online community is of particular interest because of its wide range and broad audience in the entire Dutch speaking area (Belgium and the Netherlands).

Data were collected after obtaining written consent from the administrator following guidelines for analysing online support forums developed by Smedley and Coulson (2018).

In a first phase this forum was systematically screened for relevant accounts on BZD/Z use (of both users and former users) as well as general posts on sleeping medication and tranquillisers. In addition a more detailed search was conducted with specific keywords related to sleeping medication, tranquillisers, sleeping problems and dependence to avoid missing relevant posts. A total of eight discussions -initiated between 2013 and 2019- including 165 postings were collected. These data were gathered by manual copy-paste function into a Word document after which they were raw-peeled in a second phase (Salzmann-Erikson and Eriksson 2012). Raw peeling of the forum data resulted in downsizing from 58 pages (18 413 words) to 45 pages (15 642 words) (12 pt text, single spaced). After removing identifiable data, these text files were uploaded in NVivo for analysis.

Dataset

The selected posts were written by 54 different pseudonyms. Posting frequency by pseudonym varied between 1 and 14 posts (av:3, m:2). A total of 21 pseudonyms belonged to female posters, an equal number to male posters and 12 pseudonyms could not be assigned to a specific gender. Regarding the use of BZD/Z a third (18 posters) positioned themselves as current habitual users of BZD/Z, among whom two persons clearly expressed a wish for cessation. In addition, six posters identified as former habitual users of BZD/Z who tapered off and quit using BZD/Z. Contrastingly 15 posters presented themselves as fervent non-users. An additional number of 15 posters only offered general advice to their peers without revealing whether they were using or had ever used BZD/Z. Over half of the posters (n=29) clearly expressed having sleeping problems, and only four explicitly stated not experiencing any sleeping problems. Another 21 posters did not explicitly mention any type of sleeping problem.

Not all habitual users mentioned their type of medication. The types of BZD/Z mentioned are: zolpidem/ Stilnoct® or Zolpidem EG® (n=5), bromazepam/Lexotan® (n=4), lorazepam/Serenase® or Temesta® (n=3), lormetazepam/ Loramet® (n=1) and alprazolam/Xanax® (n=1). In addition, some forum members mentioned taking medications for their sleeping problems that do not belong to the class of benzodiazepines, especially trazodone/Trazolan® (n=5) but also prothipendyl/Dominal forte® (n=1).

Eventually six different discussions were selected for analysis (see table 1) as these addressed sleeping medication. Two discussions were left out, as they either were not addressing the topic of BZD/Z use or did not receive any replies.

In the first long discussion ('Good sleeping aid'), the initial poster self-positions as someone who is aiming at tapering off medication, and looking for a sleep aid without habituation forming properties. As a result the majority of answers contains advice in the form of complementary treatments (herbal,

psychological), sleep promoting habits, routines or activities and comments meant to discourage the use of BZD/Z. Some posters also comment on specific types of medication mentioned, by offering clarifications on pharmacological properties. These comments dissuade other forum participants from using BZD/Z and warn for the potency of the medication. The positioning of the initial poster as someone who is tapering off, also allows different comments with advice regarding sleeping medication, sometimes in combination with alternative medicine. These posts are initially written in an open, matter-of-factual manner, yet after some cautious comments with warnings on these medicines, the initial posters of more pharmaceuticalised advice start to 'defend' themselves.

Table 1 Overview of selected discussions

TITLE	
1.	'Good sleeping aid'
2.	'That sleep huh'
3.	'Lexotan'
4.	'To sleep'
5.	'To sleep'
6.	'Maggie and the Sandman'

In the second discussion ('That sleep huh'), the initial poster self-positions as someone who never sleeps long and is looking for solutions and advice. This poster clearly states that medication is not an option. Here the majority of answers contains experiential knowledge on sleeping aids (mostly avoidance, some herbal remedies). Only three members post advice on medication (zolpidem).

The third discussion ('Lexotan') is started by someone who experiences side-effects (nausea) when taking bromazepam. This opens the floor for other negative experiences with BZD/Z: drowsiness (hang-over), reduced effect after prolonged use and habituation. Some warn and inform about what this medication 'really' is. Others recommend to take other medications, to taper-off and to visit a GP.

The fourth and fifth discussion (both entitled 'To sleep') are started by the same poster to ask advice on how to sleep more than the average five hours on lorazepam. Due to the initial positioning as someone who takes sleeping medication, more answers are formed based on the implicit openness towards the use of sleeping medication. In the fifth discussion there is an equal amount of reactions of people who recommend medication and who advise against medication.

Finally, the sixth selected discussion ('Maggie and the Sandman') is initiated by someone who severely criticizes the then new policy to reduce the use of sleeping medication in the Belgian population (the campaign was launched in February 2018, see also annex I). The initial post is a long argumentation in favour of medication. Due to the quite frank tone of this initial message, following replies tend to be more unreserved in tone as well, either overtly defending or criticising BZD/Z use.

Data analysis

The data analysis procedure was developed by the first author and revised by the other authors in an iterative process. Initially the dataset was coded based on recurrent themes, including statements about sleeping problems and anxiety that offer insight into how medication choices are made, tacit rules of inclusion and exclusion which prescribe what can be said and thought in relation to BZD/Z and the emergence of opposing argumentations both within and between different discussions and over time. To identify interpretative repertoires, the dataset was subsequently scrutinized for recurrent linguistic patterns of argumentation and rhetorical tools, including the organisation of talk around contrasts, repetition of words and grammatical structures, metaphors (Wetherell and Potter 1988), micro narratives or brief narrative fragments (Recuber 2015) and other discursive devices described by Wood and Kroger (2000). In the next phase, posts from different discussions were reorganised per pseudonym to explore tendencies in individuals' accounts. To connect emerging repertoires to types of medication users, this reordered dataset was analysed afresh based on the emerging framework of interpretative repertoires. This final coding was performed independently by two different researchers to increase the reliability of our results. Diverging interpretations were discussed until consensus was reached. To illustrate the observed patterns, selected excerpts were translated into English and paraphrased for privacy reasons.

Ethics

This study is part of a larger multimethod nethnographic study on habitual use of BZD/Z. The overarching research project (BELSPO BENZONET DR/81) received a positive advice from the Ethics Committee of the Faculty of Political and Social Sciences of Ghent University. Several measures were established to protect posters' privacy: 1) anonymization by removing all potentially identifying information, 2) paraphrasing, 3) using composite analytical accounts of multiple messages without direct quotations and 4) fragmentation of translated quotes that are discursively relevant (Sugiura et al., 2017; Smedley and Coulson, 2018).

Results

Our analysis revealed five different interpretative repertoires, employed to account for BZD/Z use by adults who contribute to the forum discussions (see table 2). Overall, in the different discussions a debate is unfolding between on the one hand advocates of non-medicalised solutions who draw on the risk and addiction, alternative pathways and cessation repertoires or a combination thereof, and proponents of a medicalised solution for sleeping problems who either retreat to the rationalisation and suffering repertoires. Repertoires are often selectively drawn upon and reworked. Furthermore, the combination of repertoires by a poster is not always condensed in one post or discussion but also evolves over time. To grasp the relative appearance of each repertoire in our dataset, we linked repertoires to individual posters. The majority or a bit over one third of all posters (31%) relies solely on the alternative pathways repertoire, while 23% relies on the rationalisation repertoire. The risk and addiction repertoire is employed by 10%. The suffering repertoire is uniquely used by 8% of the posters. Almost a quarter of all posters (23%) relies on a combination of repertoires. In the following part, each repertoire will be described.

Repertoire	Rationale	Discursive devices	Type of BZD/Z user
Risk and addiction	BZD/Z are harmful, addictive and provide side-effects	Biomedical vocabulary (neutrality effect) Category entitlement (fact construction) Metaphors and hyperboles (stressing the negative effects of BZD/Z)	Non-user Former user
Alternative pathways	BZD/Z can be avoided, other solutions for sleeping problems are possible	Micro-narratives (fact construction) Hedging	Non-user Former user
Suffering	BZD/Z are absolutely necessary	Metaphors and hyperboles (stressing the negative effects of insomnia)	Current habitual user
Rationalisation	BZD/Z are beneficial and I use BZD in moderation	Diminutives Metaphors and euphemisms (stressing the moderation of their use) Comparisons and trade-offs Sophisms (disengagement beliefs) Recognizing truth ('argument of control') Corroboration (support by GP) Active voice (first person agency)	Current habitual user
Cessation	BZD/Z use can be stopped without major issues even after years of use	Active voice (regarding tapering off, cessation agency) Passive voice (regarding previous prescriptions, divert responsibility) Metaphors (stressing negative aspects of BZD/Z) Micro-narratives (fact construction)	Former user

Table 2 Overview of different interpretative repertoires on BZD/Z use

Risk and addiction repertoire

The risk and addiction repertoire contains multiple warnings against the use of BZD/Z. The emphasis lies on negative aspects and inherent risks of habitual use of BZD/Z use. In this repertoire BZD/Z are considered harmful. Posters who rely on this repertoire, underline both physical and psychological

addictive properties, a risk of habituation and side-effects of BZD/Z and present these as serious health threats.

'You can get side-effects, hallucinations, strange thoughts...'

This repertoire is employed by both fervent non-users and former users, and is applied with the aim of warning others for the pitfalls of long term use of BZD/Z, to either dissuade them from starting or persuade them to cease. The tone of this repertoire is cautionary as in the following quotes: *'My motto is: DO NOT TOUCH IT ☺', 'It is best to avoid'.*

The discursive devices linked to this repertoire include firstly a seemingly objective biomedical vocabulary on risk and harm that supports the authority of the poster. This biomedical language includes statements about potential physical addictive properties: *'Sleeping medication is addictive', 'There is a risk of addiction', 'These are drugs'¹, 'Sleeping pills are drugs and many people are addicted to them'* as well as statements about psychological dependence such as: *'It's all in the mind', 'It's the idea', 'It's in your head'* and *'It's a placebo, the idea that you have taken it offers peace'.*

Secondly, to justify their claims and build up factuality users of this repertoire rely on category entitlement, a tool based on the idea that certain categories of people are considered knowledgeable about a specific domain (Wood and Kroger, 2000) and thus offered credentials to make statements about BZD/Z and sleeping issues.

'Anything is better than those addictive benzodiazepines. I recently met someone who had been admitted several times for an addiction to these drugs... so no laughing matter. If you don't stop in the short run, then you will always need more. And if you use it with alcohol, then all bets are off.'

Thirdly, metaphors and hyperboles or stylistic exaggerations serve to stress side-effects (such as drowsiness) or to embellish accounts of negative effects

'If I'd take them I'd sleep three days straight.'

'Sleeping medication is as unhealthy as smoking, and creates holes in your brain.'

'I prefer to live without all that sedation.'

'When I use bromazepam for a while, I can hardly eat, with every bit that I swallow I become nauseous. Nothing tastes good anymore and my stomach feels so chemical.'

¹ In Dutch the word drugs is uniquely used to refer to hard drugs (and not to medication).

Posts that draw on this repertoire are formulated either in a more factual way (when information on side-effects and addictive properties are stressed) or in a more moralizing way (containing blunt anti-drugs statements).

Alternative pathways repertoire

The alternative pathways repertoire is built around the idea that BZD/Z can be avoided as other solutions for sleeping problems are possible. This repertoire contains numerous personal accounts of experiential knowledge on natural sleeping aids and nonpharmaceutical alternatives. As shown in annex II, the range of user-shared instructions to treat sleeping problems is broad and can be subdivided into advice based on a biological explanatory model of insomnia (in which distorted sleep is seen as a disease with a physiological basis) and a psychologized explanatory model of insomnia (in which distorted sleep is seen as a treatable underlying symptom of another problem). Based on the former vision, suggested treatments include sleeping aids of 'natural' origin such as prominently discussed melatonin preparations and herbal remedies. The latter model on the contrary supports an array of psychological recommendations on sleep hygiene and bedtime rituals, lifestyle changes that might positively influence sleep and psychosocial advice. The overall tone of this repertoire is positive and allows a comforting recognition of the possible impact and burden of sleeplessness, sleep disruption and deprivation, while simultaneously presenting supposedly less harmful solutions. All of these solutions are experiential, informal ways to treat sleeping problems. Posters who rely on this repertoire did not recommend consulting a general practitioner or other health care professionals.

This repertoire is drawn on by non-users and former users alike, as well as by current users who are (actively) preparing to stop. Two types of discursive devices mark this repertoire. Firstly, micro-narratives on personal successful experiences with non-pharmaceutical alternatives are used to subtly dissuade others from using medication. These micro-narratives underline the usefulness of the presented alternatives through discursive fact construction.

'A warm bath in the evening helps to relax. I also read in bed every night until I fall asleep. When I wake up at night, I read and quickly fall asleep. With reading you avoid worrying about what keeps you awake.'

'I just wait until I fall asleep. The more you focus on the fact that you are supposedly not sleeping well, the worse it gets. Every night is different. Usually after one or two sleepless nights I sleep much better the next night. I think sleeping for four hours continuously is quite an

achievement. Usually I wake up because of the pain, but this will pass too. So for the time being, no pain relief, if it can be done differently. And certainly no sleep medication!

This repertoire is further characterised by the use of hedging, a discursive technique in which claims are subtly weakened to save face, mainly through conditionals. Examples include: *'If it does not benefit, it will not harm'*, *'You can take Rescue night Bach blossom'*, *'Valerian might help too, it calms and relaxes'*. Posters thereby prevent negative feedback (in case the recommended approach would not work) and avoid coming across as pedantic.

Suffering repertoire

In this repertoire BZD/Z use is supported and motivated based on emotionalized arguments. Posters who rely on this repertoire maximalise the severity of either the circumstances that initially lead to the use of BZD/Z (loneliness, psychological suffering due to loss of a loved one, physical suffering due to severe illness or damaged biorhythm due shift work) and/or their suffering as a result of sleeping problems. The detrimental impact of sleeplessness and the impact of the lack of sleep on one's normal functioning is highlighted and magnified to justify long-term use of BZD/Z. Discursive devices that serve to underline the severity of their personal situation, include metaphors and hyperboles: *'Lying awake in bed is hell.'*, *'A lack of sleep turns me into a zombie'*, *'Sleep absenteeism, obstruction and deprivation are used as means of torture...'*, *'The minister who wants to reduce BZD/Z use should experience what it feels like not sleeping for three days, like a zombie, exactly!'*

This repertoire is only employed by habitual BZD/Z users, for example when seeking advice on starting more potent BZD/Z medication or when complaining about a federal prevention campaign. Unlike the other repertoires, this one is less commonly drawn on to offer advice on medication to others with sleep complaints. By magnifying the severity of the underlying causes or consequences of sleeping problems, a certain degree of helplessness (or lack of personal agency) is expressed. This repertoire is foremostly employed to represent oneself as deserving of medication.

Finally, in this repertoire sleeping problems are portrayed as a rather unchangeable given or inherent trait (*'short sleeper'*, *'for many years'*, *'continues to determine your sleep for the rest of your life'*). This seems to avert responsibility for BZD/Z use, and shows a lack of agency, as is also illustrated in the following quote:

'[insomnia] takes possession of a man and you can hardly do anything about it'

Rationalisation repertoire

The rationalisation repertoire is also uniquely employed by current habitual users, who also show an awareness of the potential negative aspects of BZD/Z use, unlike those who rely on the suffering repertoire. As such this repertoire contains diverse rationalisations to ease the apparent conflict or cognitive dissonance between the use of BZD/Z and prevailing norms and (biomedical) knowledge on potential negative effects. In this repertoire, the (risk of) BZD/Z use is minimised and presented as beneficial when used rationally and controlled. Doing so, the stigma of addiction is discursively negotiated and a potential positioning as 'addicted' is actively resisted. Either directly by saying that 'addiction is a choice', or more implicitly by using seemingly more objective or rational(ised) reasons. This stands in strong contrast to the emotional reasons and tone in the suffering repertoire.

Posters who rely on the rationalisation repertoire seem to constantly negotiate the negative aspects of BZD/Z use either implicitly or more explicitly, often through a combination of multiple discursive devices. A typical tool that is unique to this repertoire includes trade-offs. The potential benefits of longer and better sleep are said to outweigh the (known) risks and users who rely on this repertoire tend to prefer the option of risk management. Examples include: *'Better to take a pill every now and then, to get a good night's rest than to lay awake every night'*, *'insomnia is a heavy burden on our daily lives'* or this more metaphorical and implicit formulation: *'sleeping healthily is a dream for many'*.

This repertoire is further exemplified by the use of multiple minimisation techniques. Diminutives underline the moderateness of the use or dosage, such as *'a little pill'*, *'a little relaxant before bedtime'*, *'a little Trazolan®'*, *'a tiny half'*, *'mother's little helper'*; metaphors and euphemisms: *'a relax pill'*, *'it is not a sleeping pill but a pill to fall asleep'*, *'it is an additional sleep aid'*. Another minimisation technique involves minimalizing the dosage or frequency of use: *'I have been tapering down from 1 to ½ pill'*, *'I only need them at night'*, *'I take half a pill every evening'*, *'one little tablet for the entire night'* or stressing the limited need *'I only need a pill to fall asleep not to continue sleeping through the night'*; *'I use it when I haven't been sleeping well for a couple of nights in a row'*, *'I do not use them daily'*, *'I only use them to rest at night and to be alert during the day'*. Comparisons of personal medication to medications that are considered to be more harmful serve the same purpose (especially Z-drugs are considered less harmful than benzodiazepines).

Furthermore, sophisms or fallacious arguments around prolonged use or age make motivations appear rational and are so-called fact constructing techniques: *'if you take it for that long, it can't be bad'* and *'starting with something at our age is often not as harmful as when you start at a young or middle age'*, *'at our age it is necessary to take pills'*.

Another common technique in this repertoire is recognising truth in other positions on the negative impact of BZD/Z, while renegotiating it. As an outcome, one's own position is rendered more reasonable:

'An addiction, especially to sleeping pills, is something you are in control of, rather than the (little) pills themselves.'

'It is not because you use sleeping pills that you become addicted.'

Moreover, corroboration techniques avert negative comments and avoid responsibility: *'upon advice of my pharmacist'*, *'under the supervision of a GP'*, as well as tropes that underline the freedom to decide on one's health choices: *'I am old enough to choose wisely with the support of my GP'*, *'third agers are capable of deciding for themselves'*, *'everyone has a personal sleeping story, and it's hard to account for someone else'*.

Positive metaphors and emoticons underline the benefits of BZD/Z: *'and we slept happily ever after 😊'* (smiley and thumb up). Such expressions limit further discussion about the possible negative effects all together, and are specific to online forms of interaction in which a discussion can be closed with one such reply.

Cessation repertoire

In the cessation repertoire, the use of BZD/Z is presented as something that can be stopped relatively easily, by offering technical or 'how-to' information (for example on a stepwise method to taper off or on combining melatonin with BZD/Z). This repertoire is used by former users, who successfully stopped. Tapering off (stopping gradually) is recommended and presented as something that can be achieved easily, even after years of habitual use. Possible difficulties related to cessation are therefore minimized. The tone of the repertoire is mild, non-judgmental and positive and therefore encouraging for users who contemplate to stop. The repertoire emphasises personal agency and self-determination, mostly reflected in the use of the active voice regarding tapering off and cessation:

'You can easily get rid of benzodiazepines such as Trazolan® (sic). The problem is rather the fear of not being able to fall asleep and thinking I am not sleeping yet or lying awake, waiting to fall sleep. Think of fun moments from the past when you could still fall asleep without sleeping pills and focus ONLY on those memories, if necessary on childhood memories. For me this works fine....'

Contrastingly, this repertoire is also exemplified by the passive voice and verbs that indicate an external obligation when referring to the initial prescription. Such constructions divert responsibility

and avoid agency regarding the initiation of BZD/Z use. *'It was prescribed to me by the doctor as a sleep regulator'. 'I once had to take something to be calm and sleep well. Yet, in the long run, I wanted to quit because I didn't want to abuse pills.'*

Additionally, micronarratives serve the purpose of fact construction:

'After losing a beloved one, I took pills for six months and got rid of them again effortlessly'.

Moreover, former users do not explicitly mention help from health care professionals when tapering off. This omission further emphasises their personal agency in the decision to quit, which is also illustrated in the use of the first person singular. Personal reasons for stopping are mostly described as self-directed, inspired by a decreasing effectiveness or out of fear for side-effects (*'I did not want to abuse medication'*). Discursive devices that underline this include some metaphors that negatively portray BZD/Z: *'I just stopped with that chemistry'*.

These arguments partially overlap with the risk and addiction repertoire. Yet the cessation repertoire stands out, as only recovered former users (as peer experts) rely on this repertoire, while the risk and addiction repertoire is also used by fervent non-users to judge and reject the use of BZD/Z.

Discussion and conclusion

All repertoires - except for the suffering repertoire- emerge from the tacit idea that habitual use of medication for sleeping problems is undesirable. Posters who rely on the dominant alternative pathways repertoire offer peer advice in a positive and friendly atmosphere. Likewise, the cessation repertoire is also used to express positive regard and solidarity with those contemplating or struggling to stop. In doing so, posters who rely on these repertoires present themselves as fervent yet compassionate non-users, hence, without the explicit moralising undertone discerned by Gabe et al. (2016). The risk and addiction repertoire on the other hand, is marked by vivid warnings and is much more explicitly moralising in tone. Posters who rely on this repertoire portray themselves as 'noble non-users' (Gabe et al. 2016). However, in some instances posters who rely on these repertoires also position themselves as someone who was strong enough to overcome former chronic use, i.e. as a 'recovered user'. In relation to research on the use of BZD, this is a new position, although this position has been identified as occurring often in discourses on recovery from substance abuse or addictive behaviour more generally (Mudry and Strong, 2013; Sibley et al., 2020).

The idea that long-term use of sleeping medication is unfavourable has been spread by the Belgian federal government for quite a couple of years through multiple prevention campaigns (see annex I).

The wide range of non-pharmacological strategies presented in the alternative pathways repertoire is largely in line with the official advice promoted by the government in the latest campaign of 2018. The alternative pathways repertoire thus draws on broader health promotion discourses (Cloetens et al. 2018). This dominant view aligns with the healthicisation discourse on sleep (Hislop and Arber 2003; Seale et al., 2007; Gabe et al., 2016; Cheung et al. 2017; Coveney et al., 2019). Healthicisation emphasises the importance of sleep for health, well-being and to a broader extent public safety, as 'an obligation of every responsible citizen through appropriate lifestyle choices and principles of 'good' sleep hygiene' (Williams et al. 2008: 251). Healthicisation rejects medicalised solutions for sleep management and promotes 'interventions to improve sleep hygiene and encourage healthier sleep-wise or sleep-smart lifestyles' (Coveney et al. 2019: 282). In addition, the ethos of healthicisation holds individuals responsible for their actions as they are expected to make the right healthy choices. Such a clear 'imperative of health' (Lupton, 1995) or a duty to choose the healthy solution for sleeping problems is present in all discerned repertoires.

This norm is also present in the rationalisation repertoire, in which it is however not confirmed but discursively renegotiated. Chronic BZD/Z users who rely on this repertoire express ambiguous feelings about their use. They seem to be well aware of the potentially hazardous effects of their medication use. Yet they discursively renegotiate that information, through arguments that present one's use as rational, controlled and reasonable. Posters who rely on the rationalisation repertoire position themselves either as 'rational users' or -to a lesser extent- as 'compliant patients' (Lumme-Sandt et al., 2000; Gabe et al. 2016). Such justifications have been explained as a psychological coping strategy to exempt oneself from the perceived health threat and maintain a positive self-worth (van 't Riet and Ruiter 2013) while the justification of chronic use for one's peers is also a way of avoiding moral commentaries.

In the rationalisation repertoire pharmaceuticalised understandings are thus developed against the more dominant healthicist framing of solutions to sleeping problems in the other repertoires. Similar views are developed by chronic users who rely on the suffering repertoire. In the latter repertoire however, possible negative health effects are denied, and the necessity to use BZD/Z is magnified in such a way that physical health arguments are silenced. Posters who rely on this repertoire present themselves as worthy of being prescribed medication. By emphasising their suffering -that either lead to their use, or that continues despite their use- they present themselves as 'deserving patients' (Gabe et al. 2016) with all rights and duties attached to that position. This strategy is often used by first-time and habitual users (Anthierens et al. 2007, Lumme-Sandt et al. 2000, Smith and Farrimond 2018) as well as by practitioners to explain deviant prescribing behaviour (Sirdifield et al., 2013).

Overall, the imaginary on BZD/Z created in this online community is thus centred primarily around what Kivits (2013: 220) calls the online 'health role' or the exhortation 'to take responsibility for and constantly improve' one's health. In our case, this role is taken on either by reassuring that alternative non-pharmaceutical options to treat sleeping problems can work, that withdrawal is possible and feasible, or by defending a controlled and rational use of medication. Contrastingly, the more sporadically used suffering repertoire bypasses physiological health arguments, by underlining the need for medication, stressing the severity of the underlying causes and consequences of insomnia. The health role taken on in this repertoire is centred on the emotional benefits of BDZ use, which are eventually used to achieve an acceptable degree of mental wellbeing.

With our study we add to the literature on the sociology of sleep and sleeping medication, by focussing on a digital setting. Our results illustrate how this online forum serves as a site of practical and emotional support, as well as a place of moral debate that overlaps with documented offline discussions on medication (Lumme Sandt et al., 2000; Gabe et al. 2016). Posters on this forum act as reflexive users of BZD/Z, using different discursive strategies to justify their own behaviours and beliefs in relation to sleep medication. Those who do not sleep successfully -by taking medication for their sleep problems- are offered 'good' advice, experiential expertise and sometimes moralising and perhaps unintentionally stigmatising warnings. Habitual users on the other hand by defending their personal use also offer reassurance for other medication users by rationalising habitual use. In doing so, they support a more guiltfree use of BZD/Z. Although a healthicist view is dominant across the studied discussions, pharmaceuticalised ways of telling and knowing are not totally eclipsed either. Our findings thus show how dominant health discourses are re-articulated and renegotiated within posters' contributions and how participants in this online forum enact multiple repertoires in diverse, situated ways that simultaneously reproduce and, to some extent, reconfigure dominant public health promotion and pharmaceutical discourses. .

A red thread across all the discerned repertoires is that a decreased need of sleep in later life is resisted and not accepted as something natural and is sometimes even feared. This resistance equally occurs in medication users who opt for a pharmaceuticalised solution and fervent non-users. Both problematise sleep issues that come with ageing and construct these as something undesirable and unhealthy. In fact, only a couple of posts plea for merely accepting a changed sleep pattern in later life (see annex II). The broader societal norm on sleep is currently focussed on sleeping seven to eight hours straight per night, which is arguably a relatively modern construct (Williams, 2008). All repertoires and the reflected discourses, can be equally seen as inherently post-ageist (Marshall, 2015) since by constructing sleep problems in later life as something undesirable, negative ageist stereotypes are -possibly unintentionally- reproduced. Current discourses on healthy sleep reflected in the

repertoires presented here, do not seem to allow for age-diversification and rather set an average young to middle-aged adult's sleep needs as the golden standard. Our results thus add a critical perspective on dominant discourses-ideologies of health and the healthicisation of sleep. A limitation of our study is that the small size of our dataset (165 posters included in six discussions) precludes a robust quantitative analysis. In Flanders more older adult Internet users are higher educated (compared to those who are not active online) (Huisman et al. 2018) which possibly influences the health literacy of the posters in this forum who might not represent the entire heterogeneous population of people over 50. The discerned dominant healthicisation trend might be set by a higher educated segment of technologically literate older adults. Nevertheless our results show a broad range of positions vis-à-vis BZD/Z use taken on by different forum users and reflect variations in discursive negotiations of BZD/Z use among this age group.

Finally, our findings on the lay epidemiology on BZD/Z use -or the processes by which laypeople understand and interpret their health care practices and the related risks- could inform future health promotion and prevention initiatives (Allmark and Tod, 2006) to tune in with the broad discursive backdrop that prevails among targeted groups. Each of the repertoires that were discerned in our dataset bears relevant elements that could be of use in the development of future campaigns, through awareness raising on negative side-effects, tackling the disengagement beliefs presented in the rationalisation repertoire and augmenting self-efficacy by integrating success stories such as the micro-narratives in the cessation and alternative pathways repertoires (Ten Wolde et al., 2008).

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Annex I: Overview of prevention campaigns

Year	Title	Scope	Organiser
2002-2004	<i>'Keep your rest in your own hands'</i>	General information campaign about BZD/Z aimed at the entire population (via television, radio, leaflets)	Federal Public Service (FPS) Health, Food Chain Safety and Environment
2005-2006	<i>'Anxiety, stress and sleeping problems: talk about it with your doctor or pharmacist'</i>	Campaign focusing on personal interaction between healthcare providers and patient (folders, posters, resource book for doctor and pharmacist, interactive training)	FPS
2009-2010	<i>'You don't just take sleeping pills and sedatives'</i>	General campaign (television spot, website, posters, folders, bread bags, resource book, training for professionals)	FPS
2011	<i>'Medicine is not candy'</i>	General campaign (website, posters, folders)	Federal Agency for Medicines and Health Products (FAMHP)
2012-2013	<i>'You don't just take sleeping pills and sedatives'</i>	Repetition of general campaign (television spot, website, posters, folders, bread bags, resource book, training for professionals)	FPS
2016	<i>'Sleeping pills can make you fall'</i>	Campaign focussing on risks of BZD/Z for elderly (flyers, quiz, educational play, brochure, video)	Flemish Expertise Centre on Fall Prevention
Since 2018	<i>'Sleeping medication and sedatives: think of other solutions first'</i>	General campaign (website, posters, brochures, online resource book and training for professionals).	FPS

Annex II: Overview of peer advice in the alternative pathways repertoire

Type of advice	Examples
Natural sleeping aids	Melatonin Herbal remedies (Bach Blossom, valerian, chamomile, lemon verbena) Home remedies (fresh chamomile, celery, cherry juice, hot milk)
Psychological advice	Autogenic training Focusing on relaxing Not worrying Acceptance or adjusting expectations regarding sleep
Sleep hygiene and bedtime rituals	Reading Taking a hot bath before bedtime Avoid daytime napping

<i>Lifestyle changes</i>	Avoid going to bed too early
	Avoid using electronic devices in bed
	Avoid falling asleep in front of the tv
	Avoid watching thrillers or action movies just before bedtime
	Avoid staying in bed when waking up during the night
	Eating habits (avoidance of drinking coffee at night, dining late)
	Screen time
<i>Psychosocial advice</i>	Physical exercise
	Outdoor activities (gardening, camping)
	Seeking social contact (joining a club, volunteering)
	Other meaningful activities (adopting a pet)