



Dependence on the nicotine gum in former smokers

Jean-François Etter*

Institute of Social and Preventive Medicine, Faculty of Medicine, University of Geneva, Switzerland

ARTICLE INFO

Keywords:

Tobacco use disorder
Nicotine dependence
Nicotine replacement therapy
Smoking
Internet

ABSTRACT

We conducted an Internet survey in 2004–2007 in 526 daily users of the nicotine gum, to assess use of, and dependence on the nicotine gum in former smokers. We used modified versions of the Nicotine Dependence Syndrome Scale (NDSS-G), the Cigarette Dependence Scale (CDS-G) and the Fagerström Test (FTND-G). After 30 days, 155 participants (29%) indicated their gum use. Higher dependence on the gum predicted a lower chance of stopping using it at follow-up (odds ratio=0.36 for each standard deviation unit on CDS-G, $p=0.001$). More long-term (>3 months) than short-term (≤ 3 months) users of the gum agreed with: “I use the nicotine gum because I am addicted to it” (83% vs. 7%, $p<.001$), and fewer long-term users reported that they used the gum to avoid relapsing to smoking (42% vs. 92%, $p<.001$). Long-term users had higher ratings of dependence on the gum than short-term users, as assessed with NDSS-Gum, CDS-Gum and FTND-Gum (all $p<.001$). Most long-term users reported symptoms of dependence on the nicotine gum. Lower levels of dependence on the gum predicted cessation of gum use. However, long term use of the nicotine gum has no known serious adverse consequence, and may be beneficial if it prevents late relapse.

© 2008 Elsevier Ltd. All rights reserved.

1. Introduction

Nicotine replacement therapy (NRT) is effective to treat tobacco dependence: it increases by 7% the chances of quitting smoking, compared with placebo (success rates 17% vs. 10% for placebo) (Silagy, Lancaster, Stead, Mant, & Fowler, 2004). In many countries, NRT products are available in drugstores or on the Internet, without a medical prescription. Because of the lack of medical supervision, there is a concern that some people may use NRT for longer than recommended, or may become dependent on these products (Hughes, 1991; Hughes, Pillitteri, Callas, Callahan, & Kenny, 2004; Hughes, 1998). Long-term use of the nicotine gum is relatively frequent. For instance, in U.S. national samples, 5 to 6% of nicotine gum users used it for more than the recommended duration of 3 months (Shiffman et al., 2000; Shiffman, Hughes, Pillitteri, & Burton, 2003a), and in the UK, 9% of gum users in smoking cessation clinics used the gum for one year or more (Hajek, McRobbie, & Gillison, 2007). In a survey of 805 households that purchased the nicotine gum, 2% purchased it continuously for 6 months or more (Shiffman et al., 2000). In clinical trials, up to 30% of patients use NRT products beyond the recommended 3-month period (Hajek, Jackson, & Belcher, 1988; Shiffman, Hughes, Di Marino, & Sweeney, 2003b; Hughes et al., 1991a; Steinberg, Foulds, Richardson, Burke, & Shah, 2006; Johnson, Hollis, Stevens, & Woodson, 1991; Hatsukami,

Huber, Callies, & Skoog, 1993; Hughes, 1989). However, participants in clinical trials usually receive the gum for free, and having to pay for it decreases utilization (Hughes, Wadland, Fenwick, Lewis, & Bickel, 1991b).

Taking a substance over a longer time than intended is a criterion for drug dependence (American Psychiatric Association, 1994), but long-term use does not necessarily imply dependence, because dependence requires other criteria, in particular unsuccessful attempts to quit and withdrawal symptoms upon cessation. Post-marketing data from the U.S., reported by the manufacturers, indicated that only 39 cases of dependence on the nicotine gum were reported per million prescriptions (Spyker et al., 1996). However, the limitations of post-marketing surveillance data are well known (Brewer & Colditz, 1999), and survey data indicate that the prevalence of dependence on the nicotine gum in over-the-counter settings is substantially higher than that, at about 1% of ever users (Hughes et al., 2004). About one third of smokers report having ever used NRT products (Al-Delaimy, Gilpin, & Pierce, 2005). Thus, even if only 1% of users became dependent on the gum, this would still represent tens of thousands of people. Compared to normally compliant users, dependent users use larger amounts of the gum over much longer periods of time (Hughes et al., 2004; Hurt et al., 1995). Thus, dependent users may buy a sizeable part of all the nicotine gums that are sold. Even though some users may be dependent on the gum, it must be emphasized that there is no known adverse consequence of long-term use of NRT, except for the financial cost, and that the potential benefits (i.e., prevent late relapse) far outweigh the drawbacks. This is probably why dependence on the nicotine gum has been generally downplayed in the literature (West et al., 2000). In addition,

* Institute of Social and Preventive Medicine, University of Geneva, CMU, 1 rue Michel-Servet, CH-1211 Geneva 4, Switzerland. Tel.: +41 22 379 59 19; fax: +41 22 379 59 12.

E-mail address: jean-francois.etter@unige.ch.

URL: <http://www.stop-tabac.ch>.

Table 1

Predictive validity: comparison of ex-smokers who used the nicotine gum daily at baseline and were still using it daily at 30-day follow-up, with those who had stopped using the gum at follow-up

	Still using NRT daily	Stopped NRT at 30-day	<i>p</i>	Odds ratio ^a	95% CI for odds ratio	Area under ROC curve	95% CI for area under ROC curve
Number of participants	115	26					
Baseline dependence							
FTND-gum	3.4	2.3	0.02	0.58	0.36–0.93	0.67	0.56–0.79
CDS-gum	41.9	32.3	0.001	0.36	0.19–0.68	0.72	0.60–0.84
NDSS-gum	−0.5	−1.1	0.013	0.52	0.31–0.89	0.66	0.52–0.80
Overall							

^a Odds of stopping NRT at follow-up, for each standard deviation unit in dependence ratings.

previous research on this topic was often conducted in small samples (Hatsukami, Skoog, Huber, & Hughes, 1991; Hughes et al., 1986). Thus, the aim of this study was to describe the patterns of nicotine gum use and dependence in a large sample of former smokers.

2. Methods

2.1. Baseline survey

We posted a questionnaire on the Internet between November 2004 and October 2007, in English, on the smoking cessation website StopTabac.ch (Bock et al., 2004; Etter, 2007; Etter & Perneger, 2001). The questionnaire title said: “Survey for users of nicotine chewing gums”, and the introductory paragraphs did not mention that we were investigating dependence on the nicotine gum. A link to the survey was posted on other smoking cessation websites, and the survey was listed 4th–8th in Google.com when typing *nicotine gum*, during most of the data collection period. The survey is available at <http://www.stoptabac.ch/en/Gums/>.

Questions covered ever and current use of NRT products, duration of the current episode of use, number of gums per day, flavor and dose, serious attempts to stop using the nicotine gum in the past year, duration of the previous attempt to stop using the gum, craving for the nicotine gum during the last attempt to stop, reasons for using the gum, and craving for cigarettes (Table 1).

There are several measures of dependence on cigarettes, but we know of no validated measure of dependence on the nicotine gum. The most frequently used measure of cigarette dependence is the Fagerström Test for Nicotine Dependence (FTND) (Heatherton, Kozlowski, Frecker, & Fagerstrom, 1991). Another scale is the 19-item Nicotine Dependence Syndrome Scale (NDSS), which covers 5 aspects of dependence: Drive, Priority, Tolerance, Continuity and Stereotypy (Shiffman, Waters, & Hickcox, 2004). A third instrument, the Cigarette Dependence Scale (CDS), is a brief (12 items), self-administered, single-dimension measure that covers DSM-IV and ICD-10 criteria of nicotine or tobacco dependence (Etter, Le Houezec, & Perneger, 2003; Etter, 2005). Finally, craving for cigarettes can be assessed with the 4-item Craving subscale of the Wisconsin Withdrawal Scale (WWS) (Welsch et al., 1999).

We modified FTND, NDSS, CDS and the craving subscale of WWS to assess dependence on the nicotine gum. We replaced the words “cigarette” by “nicotine gum”, and “smoking” by “using” or “chewing nicotine gum”. We modified the NDSS item “I tend to avoid restaurants that don’t allow smoking, even if I would otherwise enjoy the food” into: “I tend to avoid places where I cannot chew nicotine gums, even if I would otherwise enjoy the company”. We dropped the NDSS item: “Even if traveling a long distance, I’d rather not travel by airplane because I wouldn’t be allowed to smoke”,

because it cannot easily be modified for nicotine gum use. We computed NDSS standardized scores as recommended (Shiffman et al., 2004). We also used some items adapted from the Attitudes Towards Smoking scale (ATS-18) (Etter, Humair, Bergman, & Perneger, 2000; Christie & Etter, 2005).

2.2. Follow-up survey

After 30 days, participants who agreed and indicated an e-mail address received a message inviting them to say whether they were still using NRT, and to indicate their level of craving for the nicotine gum.

Table 2

Characteristics of former smokers who used the nicotine gum daily, according to the duration of gum use, Internet, 2004–2007

	Used gum ≤ 3 months	Used gum > 3 months	<i>p</i>
Number of participants	217	302	
Men (%)	41.2	36.8	0.32
Age (median)	38.0	47.0	<0.001
Household income (% at or above national average)	81.3	82.8	0.20
Time since they had quit smoking (days, median)	15	960	<0.001
Duration current episode of NRT use (days, median)	14	730	<0.001
Number of nicotine gums per day (median)	6.0	10.0	<0.001
Number of nicotine gums per day (25th and 75th percentiles)	4–8	8–14	<0.001
Dosage=dose* gum/day (nicotine mg/day, median)	14.0	24.0	<0.001
Use neutral flavor (rather than mint or fruit flavor) (%)	24.9	47.8	<0.001
Made a serious attempt to stop using nicotine gum in past 12 months (%)	12.9	37.2	<0.001
Duration of most recent attempt to stop using the gum (days, median)	6.0	2.0	0.037
“Extremely strong” urge to use gum in 1st week of last attempt to stop (%)	29.0	59.2	<0.001
“Extremely strong” urge to smoke in 1st week of last attempt to stop using the gum (%)	20.2	6.8	<0.001
I have had frequent urges to smoke (% agree)	49.3	14.1	<0.001
FTND-gum	1.9	4.0	<0.001
CDS-gum	28.4	47.0	<0.001
NDSS-gum Overall	−1.5	0	<0.001
NDSS-gum Drive	−1.2	0.4	<0.001
NDSS-gum Priority	−0.7	−0.7	0.67
NDSS-gum Tolerance	−1.4	−0.5	<0.001
NDSS-gum Continuity	−0.2	0.7	<0.001
NDSS-gum Stereotypy	−0.1	0.9	<0.001
Minutes to 1st gum of the day, median	60.0	20.0	<0.001
Craving for the gum (4-item scale, 0–4 ratings, mean)	1.6	3.1	<0.001
Stopping all NRTs would be “very difficult” + “impossible” (%)	14.0	60.1	<0.001
Addiction to nicotine gum compared with former addiction to cigarettes (% “same” or “stronger”)	9.0	49.5	<0.001
If you decided to stop all NRTs, likely to succeed? (% not likely)	16.1	42.7	<0.001
Reasons for using the nicotine gum (% very+extremely true)			
To deal with my cravings for cigarettes	84.8	32.7	<0.001
To deal with nicotine withdrawal symptoms	72.8	59.6	0.001
To quit smoking or avoid relapsing to smoking	92.3	42.0	<0.001
Because I am addicted to the nicotine gum	6.8	82.8	<0.001
Reasons for NOT stopping the gum (% agree)			
I am a prisoner of nicotine gum	22.7	84.4	<0.001
I fear that I will start smoking again if I stopped using the gum	68.4	56.0	0.016
Chewing a nicotine gum...			
• calms me down when I am stressed	56.7	81.0	<0.001
• helps me concentrate better	44.5	70.3	<0.001

Download English Version:

<https://daneshyari.com/en/article/899621>

Download Persian Version:

<https://daneshyari.com/article/899621>

[Daneshyari.com](https://daneshyari.com)