

UK Men's Online Accounts Triangulated with Global Reproductive Medical Experts' Constructions of a Male Contraceptive Gel: A two study Discourse Analysis

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Abstract

Objective: *There is a lack of research into social acceptability of a male transdermal contraceptive gel (MCG). The objective was to explore men's online accounts of a MCG and triangulate this with data from interviews with Reproductive Medical Experts to understand how the social acceptability is constructed.*

Study Design: *The design was a two-study qualitative research project. Study 1 used Internet Mediated research on men's comments to three newspaper articles published in the United Kingdom. Study 2 utilized interviews with Reproductive Medical Experts to illustrate their perceptions and understandings of a male transdermal contraceptive gel. Both studies were analyzed using discourse analysis.*

Results: *The analysis resulted in 3 discourses emerging. Study 1, 'Acceptable Among Men in Committed Relationships Only'; study 2, 'A Broad Range of Male Contraceptive Options are Necessary' and 'NES/T Developed from Hormones in Female Contraception'. These discourses were dominant and occurred in over half of the participants accounts.*

Conclusion: *There is a need for further options for men to take primary responsibility for contraception. The MCG was seen as relevant to those in committed relationships, with desire expressed for other new options for men in uncommitted relationships. Further, there were concerns over the side-effects both long-term and short term in study 1, with study 2 contradicting this showing that Nestorone has already safely been used in female contraceptives for over 50 years. These findings suggest that*

when participating in media interviews, Reproductive Medical Experts should emphasize how the MCG is derived from female contraceptives already proven safe.

Keywords: *Male transdermal contraceptive gel; social acceptability; Men's Online Accounts; Reproductive Medical Experts; discourse analysis*

Implications: The male transdermal contraceptive gel showed social acceptability among men in committed relationships. Care for relaying information by Reproductive Medical Experts on side-effects in the media is required so that men can make more informed decisions.

1. Introduction

Males have limited contraceptive choices, such as the condom, vasectomy or withdrawal [1,2]. There are several different contraceptive options for men undergoing clinical trials [see³], that either inhibit sperm production, function, and/or transport [4]. There are benefits to male hormonal contraceptives such as increased bone density, functioning of muscles, and prostate health [5]. There is little research though into the social acceptance of new methods, with research overrepresenting the male contraceptive pill [see ⁶, ⁷]. However, a study of British men's online accounts found men were dissatisfied with the male pill as an option for family planning [8]. This suggests that researchers should explore the social acceptance of other male contraceptive methods in clinical trials.

1.1 Transdermal Male Contraceptive Gel

Globally, clinical trials have begun to test a male transdermal contraceptive gel (NES/T) on human participants [9]. This method involves a gel, which when applied to the skin significantly lowers sperm count to prevent conception. Specifically, Nestorone (NES) is a progestin

without androgenic, estrogenic, or glucocorticoid properties ¹⁰, when combined with Testosterone (T) it has limited side effects and acts as a contraceptive. Originally, NES and T gels were applied separately as NES gel limits the production of T and sperm count, and T gel counteracts hormone imbalances, providing a dose of synthetic T that diminishes sperm production [5].

Research on male contraceptive gels (MCGs) is limited to clinical trials and quantitative research. A 6-month study with 99 men, where 8mg of NES gel was applied to the abdomen daily and 10mg of T gel applied to the shoulders daily, found 89% achieved sperm suppression to <1 million per ml of ejaculate and there was a <2% risk of pregnancy [11]. Minor side effects were reported including acne and weight gain [12]. Other researches argued that compliance in a two-part contraceptive regimen would be poor therefore a combined formula was created using NES/T together [13]. In a 28-day trial with 44 men, the gel was applied to upper arms and shoulders daily. Results showed 85% of the men achieved sperm suppression of <1 million sperm per ml of ejaculate. Overall, 80% of the participants said they were satisfied with the gel, 50% reported that they would use the gel as their primary method.

1.2 Aims and Objectives

To the best of the researchers' knowledge this is the first study exploring the social acceptance of both men's online accounts of a MCG and Reproductive Medical Experts' perceptions and understanding of the method using discourse analysis to explore how NES/T is constructed.

92 With little research to guide the study, the objective was to explore the
93 phenomena using both Internet Mediated Research (IMR) and semi-
94 structured interviews. The research questions were, how do men's online
95 accounts construct a contraceptive gel as a potential option for family
96 planning? How do Reproductive Medical Experts, in the field of new
97 forms of male contraceptives, perceive a male contraceptive gel?; and
98 how do Reproductive Medical Experts, in the field of new forms of male
99 contraceptives, understand the background around how this alternative
100 contraceptive method developed?

101 **2. Material and Method**

102 Two studies were conducted, first was a qualitative study, utilising
103 IMR to collect data. IMR provides the ability to easily access the specific
104 population to understand the perception of men¹⁴. Online newspaper
105 articles discussing MCGs were sourced to examine interactive comments
106 by male readers, this method is commonplace when researching men's
107 health (see ¹⁵) and men and reproduction (see ⁸). These online spaces,
108 provided anonymity for responders, and are believed to provide more
109 forthcoming accounts¹⁶.

110 The second study involved semi-structured interviews with
111 Reproductive Medical Experts. The interviews lasted on average 20
112 minutes, as this was the maximum time the experts could spare. The
113 studies were conducted sequentially with the IMR study conducted first
114 to understand if the contraceptive method was acceptable among men
115 before interviewing experts. This was done to not waste experts time ¹⁷

116 and because medical professionals are often a hard to research group
117 due to time constraints ¹⁸. The research design used multiple data
118 sources to triangulate the data and provide a comprehensive picture of
119 the MCG¹⁹.

120 **2.1 Settings**

121 *Study 1* was conducted online using publicly available posts by
122 United Kingdom (UK) men in the comment section of the Daily Mail.
123 *Study 2* was conducted virtually using the platform Zoom with
124 Reproductive Medical Experts from around the world. The video function
125 was used during the interviews, but the video was not recorded for
126 ethical reasons around storage of sensitive personal data. Participants
127 provided verbal consent due to the nature of the research having to be
128 conducted online during the COVID-19 pandemic, consent was received
129 prior to the interviews commencing and was audio recorded. This project
130 received ethical approval from the University REF 3604.

131 **2.2 Participants and Sample Sizes**

132 *Study 1*- The participants included in this study were UK men who
133 responded to online newspaper articles about MCGs. An online search
134 was completed using the LexisLibrary database, only searching UK
135 newspapers. Using the search terms ‘male contraceptive’ and ‘gel’, the
136 search returned 43 results. In addition, these newspapers also had to be
137 free to access, ensuring a diverse range of accounts and that they were
138 publicly accessible. After applying the criteria three articles remained:

139 'First male contraceptive GEL that can dramatically reduce
140 sperm count is to be trialled on men (and the patch test isn't
141 where you might expect it to be!)' *Mail Online (Daily Mail)*
142 (Tanner, 2017).

143 'New male birth control gel that rubs into men's shoulders
144 "could increase MUSCLE but also trigger acne flare ups"',
145 *Mail Online (Daily Mail)*, (Chalmers & Deputy, 2018), and,

146 'Male contraceptive that can be rubbed on the arms and legs
147 to halt sperm production is revealed as academics launch hunt
148 for 80 couples willing to test it', *Mail Online (Daily Mail)*,
149 (O'Brien, 2019),

150 The article written by Tanner ²⁰(2017) described a trial for NES/T where
151 400 couples from countries including the UK, United States (US), Kenya,
152 Chile, Italy and Sweden, exploring the transition of two separate gels to
153 one combined gel as the more convenient option. Chalmers and Deputy
154 ²¹(2018) described an ongoing trial using 420 couples in various locations
155 in the US, and stated should trials be successful the gel would be available
156 in 10 years. O'Brien ²²(2019) described a trial recruiting 80 couples for
157 two years, claiming sperm production can be stopped within four months
158 of use and returns to normal six months after stopping the use of the gel.
159 It also stated that if successful, the gel will be available in three to five
160 years. The articles included 667 comments total, and a purposive
161 sampling method was used to identify those respondents accounts of the
162 MCG's ²³. The same inclusion criteria as Wilson ¹⁰(2018) was used;
163 participants that provided a pseudonym that identified as male were
164 included and posts made by female readers were only included for
165 context.

166 *Study 2* Reproductive Medical Experts from several countries were
167 contacted via email, they would have had some experience with trials of

168 male contraceptives. Potential participants were provide an information
169 sheet and consent form. An opportunistic sample included the first 6
170 experts that agreed to participate. As the pool of participants is small
171 enough to identify participants no further detail is given, however, all
172 were from high income countries.

173 **2.3 Qualitative Analysis**

174 The online accounts and interviews were both analysed using
175 Critical Discourse Analysis (CDA) (see¹⁰). This method has been used in
176 previous research on men and family planning due to the sensitive nature
177 of the topic resulting in the researcher looking for underlying meaning in
178 text and talk. The following discourses are representative of the
179 dominant themes that occurred in over half of the accounts for both
180 studies.

181 **3. Results**

182 From the analysis 3 discourses emerged. In study 1, 'Acceptable
183 Among Men in Committed Relationships Only'. In study 2, 'A Broad
184 Range of Male Contraceptive Options are Necessary' and 'NES/T
185 Developed from Hormones in Female Contraception'.

186 **3.1 Discourse 1- Acceptable Among Men in Committed** 187 **Relationships Only**

188 Overall, men constructed a discursive repertoire that they wanted
189 more contraceptive options for men in uncommitted relationships, that
190 the MCG was not for this group of men: *'Reduce' the word doesn't fill one*

191 *with confidence. [Petersfield, UK; Tanner, 2017].* Uncommitted men
192 believed that a reduced sperm count meant pregnancy was possible,
193 suggesting they may not be knowledgeable about fertility. The majority
194 of uncommitted men also constructed the side effects of the gel
195 outweighed the benefits; *If you end up with the arms of an orangutan*
196 *and a face like the surface of the moon I think the treatment will be*
197 *100% successful. [Essex, UK; O'Brien, 2019].* In this extract the reader
198 uses the discursive resource of 'arms of an orangutan' to represent the
199 muscle gain and 'face like the surface of the moon' to represent acne,
200 both side effects mentioned in the news article. Moreover, they were also
201 concerned about the MCG's effect on the environment: *So what effect do*
202 *all these gels, creams and pills have on the environment when they*
203 *eventually get washed off, or passed through the body and end up in the*
204 *sea. [Teesside, United Kingdom; Chalmers & Deputy, 2018].* With concern
205 for the 'sea' if the gel is washed off, showing a desire for male
206 contraceptives to be environmentally friendly.

207 However, those men who were in committed relationships accepted
208 the MCG as a welcome option. *'Fair enough. It makes more sense to take*
209 *the bullets out of the gun than to wear a bulletproof vest' [Middletown,*
210 *UK; O'Brien, 2019].* The discursive resource of a gun is used to represent
211 how committed men constructed risk reduction from the MCG. Noting
212 the use of a gun to represent the penis, suggesting there was masculine
213 capital for taking contraceptive responsibility. And they used humour as
214 a discursive resource to show their acceptance; *It's probably the act of*
215 *rubbing in the lotion, with the inevitable end result that reduces the*

216 *count [Sud Seax, UK; Tanner, 2017]. All articles had similar humour*
217 *about where the gel is rubbed, implying if it is rubbed on the penis that*
218 *the man will ejaculate and his sperm count will lower. Despite their*
219 *acceptability of the MCG, they predominantly believed that a vasectomy*
220 *was more effective; The snip is a lot more effective [Leigh, UK; Chalmers*
221 *& Deputy, 2018]. Suggesting they are not knowledgeable about MCG*
222 *efficacy.*

223 **3.2 Discourse 2- A Broad Range of Male Contraceptive Options are** 224 **Necessary**

225 Reproductive Medical Experts perceived that the MCG was one
226 necessary option to provide men a broader range of choices:

227 *"Yeah , I think, yeah, what are the disadvantages of those particular*
228 *types? Yeah, I mean, so condoms are great, but they're terrible, right? So*
229 *and, you know, the failure rate is, luckily it's a little lower than it used to*
230 *be, now its 13%. And, you know, in perfect use sure, but perfect use of*
231 *condoms is really difficult. And particularly non-monogamous*
232 *relationships, so, so super important, but not great. You know, vasectomy*
233 *is just, I mean, it's, it's great if people have decided, but we know, you*
234 *know, in the [Country] the reversal, you know, and, and vasectomy*
235 *reversal is really for the upper class. So, that's not an option really, for*
236 *most people. So, and there's cultural barriers to the sector as well. So, so*
237 *I think, you know, there's nothing wrong with those also, those methods*
238 *are great for the right person. But, you know, again, we're not providing*
239 *a lot of options."* Reproductive Medical Expert 4

240 In the extract Expert 4 discusses the limitations of condom and
241 vasectomy. That perfect use of condoms is 'difficult' and still has a '13%'
242 failure rate, while acknowledging that condoms are best for 'non-
243 monogamous relationships', emphasising this with 'so, so super
244 important". Vasectomy is seen as 'great if people have decided' to stop
245 having children as the reversal is expensive and for the 'upper class' or

246 those with money. It is also acknowledged that there are cultural barriers
247 to uptake. The discursive resource of “you know” is used to establish
248 comradery with the interviewer, assuming that the interviewer agrees.
249 This is a noticeable change from the ‘I’ statements made in the first two
250 sentences, which is a discursive practice for authority. Overall,
251 Reproductive Experts perceived that a MCG would give men more
252 options to take primary responsibility, as ‘we’re not providing a lot of
253 options’ currently.

254 **3.3 Discourse 3- NES/T Developed from Hormones in Female** 255 **Contraception**

256 It was explained by Reproductive Medical Experts that the
257 hormones used in the MCG came from historic developments from female
258 contraceptives:

259 *“Well, they’ve [researchers] been, you know, in different forms have been*
260 *researching it [MCG] for a while, for example, [there is] a lot of data on*
261 *testosterone, either injection or gel, being a contraceptive just like*
262 *female birth control with, you know, estrogen and progesterone in it.*
263 *That’s been going on now, it’s over 50 years of, of knowledge about that*
264 *since they started that method for the women...And, but also, they found*
265 *that not all men suppressed with just testosterone, especially*
266 *Caucasians, if you’re Asian, a different ethnicity or race and genetic*
267 *issues associated with why some and different groups suppressed [sperm*
268 *production] with one and some not. And so that’s why they added*
269 *nestorone, or a basically a progesterone derivative that the Population*
270 *Council had, had come up with, and it’s actually based on again, a*
271 *product that’s in female birth control already, and even the birth control*
272 *ring that they have.” Reproductive Medical Expert 3*

273 Expert 3 describes the use of testosterone and the understanding of
274 female contraceptives as the main components that allowed for the

275 development of the MCG, emphasising there is 'a lot of data on
276 testosterone' and that knowledge has been borrowed from 'over 50
277 years' of female contraceptives. The persistent use of 'they' in Expert 3's
278 statements show the foundations for the MCG have been long discovered
279 by researchers. However, knowledge of testosterone alone could not
280 advance the development of the contraceptive gel, with Expert 3 drawing
281 on a discursive resource of cultural barriers where the MCG did not
282 suppress sperm production the same among 'different ethnicity or race or
283 genetic issues'. Expert 3 states that this issue was rectified with
284 Nestorone 'based on again, a product that is in female birth control
285 already', in particular the vaginal ring. The use of the words 'again' and
286 'already' informs that the knowledge readily established within the
287 history and advancements of female contraceptives has been vital in the
288 progression of the MCG trials.

289 **4. Discussion**

290 The concept of male contraceptives being marketed to men in
291 stable relationships has been seen consistently; Flood ²⁴(2003) concluded
292 once a relationship becomes serious, condoms are often abandoned, and
293 it therefore makes sense that couples seek other methods of
294 contraception. Interview and focus group transcripts of the men and
295 women who participated in one of the first World Health Organisation
296 (WHO) clinical trials of an injectable male hormonal contraceptive also
297 claimed there was only scope for this type of contraception in long-term
298 relationships [²⁵]. It is therefore suggested if NES/T becomes available, it

299 would likely be targeted at men in stable relationships. This was also
300 acknowledged by the Reproductive Medical Experts.

301 The men's responses alluded to concerns over the side effects of
302 the MCG's, they were concerned about fertility, sperm production, and
303 long-term effects, but lacked the knowledge to make informed decisions.
304 These findings have been mirrored in previous literature. Side effects
305 appear to be a concern among a range of male contraceptives, including
306 the male pill [⁸]. Men from Bristol suggested they would not tolerate any
307 side effects of male contraception [²⁶]. Men unwilling to use male
308 contraceptives were also most concerned about their fertility. In a
309 qualitative study men willing to use male contraceptives presented an
310 overall anxious discourse surrounding side effects [²⁷], which is mirrored
311 in the current research. However, it is interesting to note that the
312 Experts stated there has been over 50 years of knowledge on
313 testosterone and that Nestorone, in NES/T, has already been used safely
314 in the vaginal ring.

315 There is also concern about unknown long-term effects, and
316 Manetti and Honig²⁸ (2010) claim this is the reason there are currently
317 no marketable products. Concern over side effects could also be linked to
318 masculinity or virility and suggests that men may feel emasculated by
319 having a lowered sperm count [²⁹, ⁸]. Oudshoorn³⁰ (2003) claims that
320 clinical trials for male contraceptives aim for zero risk, rather than
321 finding a balanced risk-benefit, as done previously with female
322 contraceptives. She stresses that all drugs have side effects and side

323 effects may be inevitable. Both men and women realise there is a need
324 for marketable male contraceptive products, in order to make a realistic
325 judgement [31]. Furthermore, researchers state that clinical trials have
326 run their course, and the focus should now be on distribution [32]. They
327 claim that research has been underway for decades and research now
328 needs to be transferred into the real world, as there is interest from
329 couples in novel male contraceptives [33].

330 4.1 Limitations

331 The first limitation is that the research is qualitative and cannot be
332 generalized to a larger population. Quantitative studies are required to
333 better understand how men perceive the social acceptability of a MCG.
334 The second limitation is that in study 1 there is a possibility that some
335 accounts provided incorrect details of their location or chose to use a
336 pseudonym of the opposite sex with which they identify. Third,
337 Reproductive Medical Experts could only spare 20 minutes of their time.
338 To maximize on the data quality targeted questions were developed, but
339 in the future funding is necessary to allow for participants to be paid to
340 increase interview length.

341 4.2 Conclusion

342 NES/T was socially constructed as acceptable for men in committed
343 relationships, perceived by experts as providing more options for
344 couples, and understood as developed from knowledge on female
345 contraceptives. It is important that other methods are developed for men

in uncommitted relationships, but that NES/T is still developed to provide men a range of contraceptive options similar to women. Furthermore, how side effects and development are portrayed in the media is important to social acceptability, those Experts doing media interviews should consider this.

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