

REPORT

Measurement of Social Norms Affecting Modern Contraceptive Use: A Literature Review

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As a critical building block to developing social norms interventions to support healthy family planning and other reproductive health behaviors, we conducted a literature review to identify and evaluate social norm measures related to modern contraceptive use. Of 174 articles reviewed in full, only 17 studies met our criteria for inclusion. Across these articles, no single measure of norms was used in more than one study; failure to specify the boundaries of who was engaging in and influencing the behaviors of interest contributed to the variation. Most of the studies relied on cross-sectional data, only included condom use as their contraceptive use outcome, used individual- or interpersonal-level behavior change theories rather than social-level theories, and assumed a reference group, all of which limit the quality of the norm measures. We make several recommendations to bring greater consistency and comparability to social norm measures.

Although more than 20 years have passed since the 1994 Cairo Declaration on Population and Development, access to and use of family planning remain critical issues in developing countries. Initiatives such as Family Planning 2020 (FP2020) have set ambitious goals for increasing family planning use worldwide, underscoring the continued need for interventions to address the policy, financing, delivery, and sociocultural barriers to accessing contraceptive information, services, and supplies, as well as the critical importance of ensuring that these interventions reach adolescents. FP2020 has included a focus on reaching adolescents with good reason. As of 2014, adolescents ages 10–24 accounted for over a quarter of the world's population (United Nations 2013). Unintended and unhealthy pregnancies among this age group not only affect adolescents' health and the health

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of their babies, but also affect their access to education and economic opportunity (Grant and Hallman 2006; Varga 2003).

While substantial progress has been made on the supply side of contraceptive services (UNFPA 2014) and on increasing knowledge of family planning methods (Khan et al. 2007), sociocultural barriers to accessing and using family planning methods remain (Bearinger et al. 2007; Glinski et al. 2014). Among these barriers, social pressures, sanctions, and approval from community and family members have long been recognized as playing a significant role in shaping fertility preferences (Mason 1983; Fried and Udry 1980; Udry 1982; Thompson and Goldman 1986). For example, a newly married woman may feel pressure from her in-laws to prove her fertility; she may also face social sanctions that prohibit delaying pregnancy, such as being stigmatized for using contraception. These unspoken rules that govern behavior are typically called social norms.

In the social sciences, there has been extensive analysis of social norms and how they govern behavior and, similarly, a longstanding interest among demographers and reproductive health researchers in understanding and measuring the role of social norms in shaping contraceptive use and fertility preferences (Thompson and Goldman 1986; Fried and Udry 1980; Udry 1982; Mason 1983). Early sociologists contributed to an understanding of social norms as rules of conduct involving collective values and individual-level factors that are internalized through socialization (Durkheim 1950; Parsons 1951; Weber 1922). Sanctions were widely accepted in sociological thought as the mechanism for enforcement of norms (Gibbs 1965).

Research on social norms in the public health field has been largely guided by social psychologists and behavioral ethicists (Bicchieri 2015; Fishbein and Ajzen 2010; Cialdini and Trost 1998; Rosenstock 1974). Social psychologists posit that behaviors are influenced by a desire to comply with social norms because individuals wish to fit in with their group (Crandall et al. 2002; Paluck and Shepherd 2012; Schultz et al. 2007). Behavioral ethicists have conducted experiments demonstrating that behavior can be changed by altering people's expectations about how others behave and how others think one should behave in certain situations (Bicchieri 2010, 2015).

The public health community has realized the importance of fostering social norms that support healthy behaviors in areas that include HIV testing and condom use (Dworkin et al. 2013), female genital mutilation (UNFPA Evaluation Office and UNICEF Evaluation Office 2013), and early marriage (Mackie and LeJeune 2009). In 2015, USAID awarded the Passages project to a consortium of organizations led by the Institute for Reproductive Health (IRH) at Georgetown University to support development and testing of scalable approaches to foster social norms that support family planning and other reproductive health behaviors among adolescents. The Passages project formed a metrics and assessment team to review the literature to identify social norm measures that have been used in studies of reproductive health behaviors.

Given the existence of many conceptualizations of social norms, our first step was to identify common elements within the literature on social norms in order to determine how we would define social norms or what types of questions and elements we would look for in measures of social norms. Based on this review of the conceptual literature, we found three common elements. Foremost, reference to a social norm is typically to a common or generally

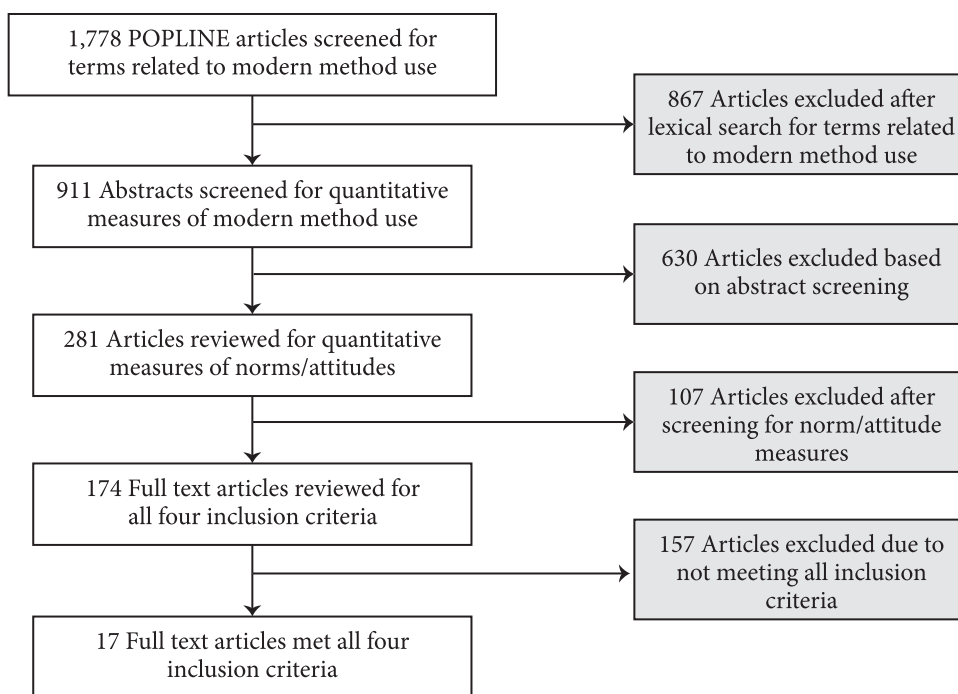
accepted practice or *behavior*. Second, the common practices are held in place by *beliefs* or *attitudes* and, third, these are shared across a group of people (*reference group*) (Marcus and Harper 2014; Heise 2015; Bicchieri 2015; Fishbein and Ajzen 2010; Cialdini and Trost 1998). Beliefs about common practices are called empirical expectations or descriptive norms, and their measures ask respondents what they believe others do. Commonly shared attitudes or beliefs about social approval of behaviors are typically known alternately as normative expectations, injunctive norms, or subjective norms; their measures ask respondents what they believe others think they should do. We use the term descriptive norms to refer to beliefs about whether behaviors are commonly practiced, and subjective norms to refer to perceptions about what others expect them to do. Notably, while some authors use the terms subjective and injunctive norms interchangeably (Drexel University School of Public Health 2016), others differentiate between perceived social pressure to enact a behavior (subjective norms) and perceptions of others' approval or disapproval of a behavior (injunctive norms) (Chung and Rimal 2016). We use the term subjective norm as an overarching term for measures of social approval, as it was the term most commonly used in the literature we reviewed.

In light of these accepted components of norms, we looked for evidence in the articles reviewed that they measured the *behavior* in question, and measured *either a descriptive or subjective norm* using a specified *reference group*. In this article, we summarize our justification for our inclusion criteria, the strategy we used to identify articles, and key findings regarding the social norms measurements identified. We summarize where, and in what types of studies, measures of social norms related to modern contraceptive use have been used and how the measures were developed and constructed. Given the growing application of social norms interventions as part of sexual and reproductive health programs, researchers and practitioners need to use appropriately reasoned, constructed, and articulated measures to evaluate the impact of interventions on behaviors. Our findings are not intended to determine whether or how social norms affect contraceptive behavior but rather to identify and compare the quality and consistency of existing measures of social norms for those seeking to create or evaluate such measures.

METHODS

To identify quantitative measures used to assess social norms related to or affecting use of family planning, we searched the POPLINE database, a common repository for both domestic and international studies that includes both peer-reviewed and gray literature. Our search spanned 2005 to 2016 and included terms to ensure that the article touched on all of the following domains: (1) sexual and reproductive health (SRH) behaviors, (2) norms, and (3) measurement.

We identified 2,242 articles, which we compiled in a master EndNote file for title screening and double screening by two research assistants. Titles were excluded for any of the following reasons: focus on a non-SRH behavior (e.g., antenatal care), a focus on key populations only, hormonal or animal studies, training manuals, and commentaries or editorials. All articles retained by at least one reviewer were subjected to further screening, leaving 1,778 articles (see Figure 1).

FIGURE 1 Schematic of the search strategy and the results

After consultation with the Passages metrics and assessment team, we narrowed our focus to articles that examined use of a modern contraceptive method, which we defined as emergency contraception, injectables, intrauterine device, implant, male and female condoms, male and female sterilization, oral contraceptives, and the Standard Days Method. Before initiating abstract screening, all POPLINE articles retained after title screening were screened for terms related to modern method use using the lexical search feature in EndNote, which identifies search terms in the title, abstract, journal name, and other EndNote fields.

The abstracts of the 911 articles that included a term related to modern methods were double screened by two research assistants for inclusion of a quantitative measure of modern method use. Abstracts that fell under the exclusion criteria outlined for title screening were excluded at this stage (e.g., studies of key populations, editorials), and articles that described exclusively qualitative assessments, measured only provider attitudes or outcomes, or were in a language other than English were also excluded. This yielded 281 articles that were screened to determine whether they included a quantitative measure of subjective or descriptive norms and investigated the relationship between norms and a behavioral outcome for modern method use.

Of the 281 articles, 174 articles that mentioned measurements of attitudes, beliefs, or norms in the abstract were retained and reviewed in-depth by one reviewer; we included mentions of attitudes and beliefs more broadly at this stage because the language related to norms, beliefs, and attitudes often conflates them. The single reviewer identified the following details: (a) authors purporting to have measured a social norm; (b) the survey questionnaire

included items designed to measure either a subjective or a descriptive norm; (c) use of a modern method of contraception was a primary outcome; and (d) the authors conducted inferential analyses relating the outcome of interest to their norm measurement. The three reviewers assessed the assembled information and made decisions on inclusion based on the details available in the article. Only 17 articles meeting all four criteria are included in this review.

RESULTS

Study Characteristics

Study Setting and Target Population

Table 1 summarizes the study characteristics for the 17 studies included in the review.¹ The largest number of studies were conducted in sub-Saharan Africa (n=7), almost all in South Africa (n=6). The remaining studies were conducted in North America (n=4), Asia (n=3), and Europe (n=3). The population of interest varied across studies by age and sex. Most studies included both male and female participants (n=12), and six included both adults and youth. Study sample sizes ranged from 104 to 4,000 participants.

Sampling Approach and Participant Selection

In most of the studies, researchers looked at populations specific to an intervention they were testing or evaluating, such as students (n=5), patients from specific clinics or with specific health conditions (n=3), individuals from specific racial or ethnic groups (n=2), or persons who lived in locations characterized by specific economic or livelihood patterns (n=2). While there were cases of purposive selection of sampling locations or geographic areas, convenience sampling of individuals was the most common approach (n= 11).

Study Designs, Analysis Approaches, and Outcomes Measured

Most studies were cross-sectional surveys (n=10). Four studies were randomized controlled trials (RCTs), three of which included multiple waves of data collection and two of which were cluster-RCTs. The remaining studies comprised one repeat cross-sectional design and two cohort studies. A variety of analysis methods were used in the 17 studies; initial bivariate analyses were almost universal, followed by multiple regression analyses (n=14), with only a few studies using structural equation modeling (Eggers et al. 2013; Van Rossem and Meekers 2011) and analyses of covariance (Chernoff and Davison 2005). Notably, all 17 studies found a significant relationship between at least one norm measure and the behavioral outcome.

Although our focus was use of modern contraceptive methods broadly defined, the outcome of interest in 15 of the 17 articles was condom use, with only one article focusing on contraceptive use more broadly and another on dual method use. Although four of the 15 measures of condom use focused on consistent condom use and three focused on condom use at last sex, none of the 15 measures of condom use was used in more than one study; the studies asked about different types of partners over different periods of time and offered different response options.

1 Tables are available at the supporting information tab at wileyonlinelibrary.com/journal/sfp.

Development of Norm Measures

Theoretical Constructs Measured

Authors typically linked their study design to one or more theories of behavior change that incorporate social norms as a construct that influences behavior (see Table 2). These theories directly influenced the selection of constructs measured in the surveys. For example, Giles and colleagues 2005 designed their study based on the theory of planned behavior (TPB), which posits that behavioral outcomes are driven by behavioral intention, perceived behavioral control, subjective norms, and instrumental attitudes; therefore, the survey included questions designed to measure participants' demographic characteristics, personal attitudes, beliefs about subjective norms, self-efficacy, behavioral intentions, and behaviors. Nine studies identified and based their study design on one or more of the following particular behavioral theories or models: the TPB ($n=4$), social cognitive theory (SCT) ($n=2$), protection motivation theory (PMT) ($n=1$), the information-motivation-behavioral skills (IMB) model ($n=2$), and the integrated change (I-Change) model ($n=1$). The other seven studies described their own theoretical or analytical frameworks, some using tenets or constructs from several of these theories, and others pulling in as well elements of ecological models and social network and habit-formation theories. Notably, many of the theories used by the authors are interrelated.

Defining Reference Groups within Questionnaire Items

For all but two studies, the questionnaire items used to measure social norms assumed a reference group, meaning that the authors pre-identified or made assumptions about which potentially influential individuals (e.g., partner) or groups (e.g., family) in the participants' lives they would ask about during the survey design phase, rather than asking participants to identify influential individuals in their lives. Assumed reference groups and the phrasing to describe them differed across studies, with friends being the most common ($n=9$), followed by partners ($n=6$), community members ($n=3$), parent(s) ($n=3$), and peers ($n=4$).

In two studies, participants were asked to define their own reference group. Van Rossem and Meekers 2011 used this approach to measure subjective norms by asking respondents to describe someone "whose opinion they valued a lot," including the type of relationship (e.g., parent, grandparent, teacher, friend, religious leader, celebrity). This person was termed a "most valued person (MVP)." The respondent was later asked how the MVP would react if he/she were to find out that the respondent used condoms. Dedobbeleer and colleagues 2005 used a respondent-defined approach to identify reference groups for descriptive norms by asking respondents to name two people they considered to be "confidants." Confidants were defined as persons in the participants' close network with whom they were comfortable discussing personal matters and who were not health-related professionals. Respondents were later asked about whether they believed their confidants use condoms.

Questionnaire Items and Measures of Social Norms

While our inclusion criteria stipulated that articles measure only one normative construct (either a descriptive or a subjective norm), five studies included items that measured both. Despite similar constructs being measured across studies, no single item or scale was exactly

duplicated. The exact items used were often difficult to identify in the journal articles, but they seemed to vary from a single questionnaire item to measure either a descriptive norm or a subjective norm ($n=2$) to as many as 26 items related to subjective norms, spread across six separate scales with three to six items per scale ($n=1$).

While six of the studies used scales to measure norms, scales were almost exclusively used to measure subjective norms—such as norms related to carrying and using condoms (Eggers et al. 2013), norms related to responsible men's positive support (Nyembezi et al. 2014), and norms of contraception (Wang and Wang 2005); only one study used a scale dedicated exclusively to descriptive norms (O'Leary et al. 2015). Stulhofer et al. 2010 developed the "norm-oriented condom scale," which included four items, two of which measured social norms ("I use condoms because everybody else is using them" and "My friends' opinion influences my condom use") and two of which measured constructs more closely related to personal attitudes or beliefs ("I do not use condoms because it would mean that I do not trust my partner" and "I do not use condoms because my religion objects to it"). All studies that used scales reported Cronbach's alpha scores, with seven of the eight studies reporting scores above 0.70, demonstrating acceptable values of internal consistency (Tavakol and Dennick 2011). Two additional studies used what we termed index measures (Eggers et al. 2013; Nostlinger et al. 2010) because they mentioned using "subjective norm scores" for analysis but did not present measures of scale reliability.

Most studies using scales mentioned Likert format-responses with summation or averaging of responses. Two studies incorporated measures of respondents' likelihood of complying with the subjective norms in the scoring approach (Wang and Wang 2005; Giles et al. 2005). Wang and Wang 2005 developed a "subjective norms of contraception scale" that incorporated the importance of four significant persons in the lives of participants (e.g., my mother is a very important person to me), participants' perceptions about these four significant persons' suggestions regarding contraception (e.g., my mother suggests that I use contraception), and participants' likelihood of compliance with their suggestions (e.g., I usually follow my mother's advice). Responses to each of the 12 statements were rated from 1 (strongly disagree) to 4 (strongly agree) using a four-point Likert format. The three scores representing each significant person were then multiplied together and the scores for each of the four other significant persons were added to obtain a total subjective norm of contraception score (range: 4–256). A higher total score represented a greater subjective norm of contraception. Eight studies used a single questionnaire item to measure norms, but most used more than one item to measure different types of norms or different reference groups that may influence behavioral outcomes, with two studies using six separate items.

DISCUSSION

Of 1,778 POPLINE articles related to social norms and use of modern contraceptive methods, only 17 (or one percent) contained a measure of social norms that we considered of sufficient quality to include in our review. Unfortunately, for field practitioners wanting to carry out social norm interventions that promote use of modern contraceptive methods other than condom use, we were only able to identify two articles that may directly inform their efforts

to measure social norms (Pack et al. 2011; Wang and Wang 2005). In the other 15 studies included, the outcome of interest was condom use, which undoubtedly reflects the prioritization of HIV research and corresponding interest in condoms for the prevention of HIV rather than as a contraceptive method. Below we summarize challenges related to the norm measures we identified, including issues related to defining or bounding reference groups, reliance on individual-level rather than social-level measures and theories of change, and variations in terminology and approaches to measurement construction.

A major reason for the poor quality of the social norm measures in many of the articles we reviewed was the failure to specify the boundaries of who was engaging in and influencing the behaviors of interest and a lack of some means of validation of the assumed reference groups. For example, Thomas et al. 2013 employed questionnaire items that measured both descriptive and subjective norms related to condom use, using a reference group they defined as “friends and other people who are important to you.” This approach lacks the specificity needed to identify and potentially intervene with these groups. Similarly, many of the studies used convenience sampling at a selected recruitment setting, such as a school or clinic, and seem to have assumed that the individuals recruited from these settings would share the same reference groups and engage in the same behaviors. Finally, only three of the studies contained items designed to assess the relative importance of the reference groups (Wang and Wang 2005; Van Rossem and Meekers 2011) and/or allowed the respondents to define their own reference group (Dedobbeleer et al. 2005; Van Rossem and Meekers 2011).

To the extent that individuals may feel pressure from disparate reference groups (e.g., in-laws, religious leaders, partners, or social media), more clarity is needed in describing who these groups are, how much influence one reference group has compared to another, and whether the reference groups differ between the descriptive and the subjective norms or are the same for both. Eight of the 17 studies combined questions that addressed different reference groups into one scale. Insofar as social norms are multidimensional, it would seem that development of a scale measure is warranted and should be encouraged. Nonetheless, this combining of different reference groups into one scale resulted in a lack of comparability and of clarity about the individuals to which the norm applied. Notably, although all 17 studies found a significant relationship between at least one norm measure and the behavioral outcome, the internal validity of their findings is called into question given the absence of evidence that the underlying reference group for the social norm measure is appropriate across the survey respondents,

Despite the fact that norms are a social phenomenon occurring at a group or community level, all of the norms included in this review were measured at the individual level. None of the studies looked at policies or trends in social media at the level of the group, community, or culture that would provide evidence of a more collective social norm. Not surprisingly, therefore, the theories used were similarly almost exclusively developed to describe behavior change at the individual or interpersonal level. This is largely understandable because the authors’ outcomes of interest—condom use or contraceptive use—are individual or interpersonal behaviors and the authors were interested in how social norms influence personal behavior. In another school of thought, communication researchers further distinguish between norms measured at the social or collective level and those measured at the individual level; the latter they refer to as perceived norms because they are the individual’s interpretations

of norms that may exist at the collective level (Lapinski and Rimal 2005). This distinction is important because aggregating individual reports of perceived norms may not represent the norms that prevail at the collective level, since individuals may interpret the norms differently from the way they are interpreted collectively (*ibid.*).

Our ability to compare the merits and drawbacks of social norms measures related to modern contraceptive methods is constrained by several methodological limitations. Perhaps most important, our review methodology was not intended to be an exhaustive review of all available literature published on social norms related to use of modern contraceptive methods. As noted in the methods section, a decision was made to limit the review to literature available from POPLINE. It is likely that additional relevant literature may be available from other databases of published literature. Second, this review was limited to works published in English, which may have excluded relevant studies published in other languages. Because our search strategy was developed iteratively and in consultation with partner organizations, the decision to limit the inclusion criteria to articles that included a quantitative measure of modern method use occurred after initial title screening had taken place. This decision, however, resulted in a larger pool of articles than would have been found if only terms related to modern methods had been included in the initial search strategy (*i.e.*, those pertaining to eight behaviors rather than just one) and thus is unlikely to have excluded any relevant literature from POPLINE.

CONCLUSIONS

Although our review included only 17 articles on measures of social norms, the large variation and lack of duplication of measures, combined with the fact that so few met our inclusion criteria, illustrate the challenges throughout the broader field of social norms research. To the extent that social norms are likely to be context-specific, the fact that the cultural and social contexts of the studies included here varied widely undoubtedly contributed to the measurement variation we documented. Indeed, given the context-specific nature of social norms, formative research seems warranted to inform the development of questionnaire items. Subsequently, inclusion of questions to determine not only behaviors but also beliefs about social approval and about common practice, as well as appropriate reference groups pertaining to each, is also labor intensive. We recognize, however, that there is an inherent tension between these extensive data collection demands and the resources available to many public health programs to incorporate into their evaluations and surveillance. In the meantime, family planning programs and the larger field of social norms research could benefit from efforts on both the applied and theoretical fronts to advance the comparability and quality of social norms measures.

To begin, we recommend that, until better-quality evidence emerges to indicate the inclusion or exclusion of specific reference groups, public health practitioners and researchers allow respondents to identify the type of people or the specific people in their lives who influence their behavior. To the extent that reference groups are to be included, egocentric enumeration (*i.e.*, allowing survey participants (*ego*) to identify the individuals who influence their behavior) would provide greater insight for interventions than assuming that all individuals

engaging in a certain behavior are influenced by the same sources. Along these lines, additional exploratory or experimental research seems warranted to determine the most relevant reference groups and the most effective and efficient methods of identifying social norms; vignettes are an approach that has shown promise (Cislaghi and Heise 2016). To the extent that descriptive and subjective norms are assessing expectations about two typically disparate sets of people (i.e., those engaging in the behavior vs. those who influence the behavior), we encourage the adoption of terms that clearly distinguish between these groups—such as empirical (i.e., descriptive norm) reference groups and normative (i.e., subjective norm) reference groups.

Further, the development of a more nuanced, social-level behavior change theory that incorporates the notions of reciprocity and power (Parsons 1951) is clearly needed to guide social norms research and the development of social norm measures. We encourage researchers and practitioners to pursue approaches to measuring social norms at the collective level. At this level, measures may be less encumbered by issues pertaining to reference groups and thus more easily obtained and evaluated. Additional data gathered at the collective level could help provide the evidence to support social norms interventions and improve the conceptualization and theorizing pertaining to social norms.

Finally, given the variability in social norms and the current measures, not only in the reference groups but also in the types of norms and behavioral outcomes being studied, it seems premature to develop a scale measure of social norms that could be applied across cultural settings to different types of norms. Instead and perhaps most important, the field would benefit substantially from consensus or standardization in terminology. Authors could contribute to this goal by specifying the type of norms they are seeking to measure and the theoretical framework they are using to conceptualize their measure. In turn, journal editors and reviewers should require this type of clarity in submitted manuscripts and should advocate increased use of standardized or commonly used terms and measurement approaches. Some elements of such a standardized approach could be applied across behavioral outcomes—including contraceptive use—and thus bring some consistency and comparability to social norm measures and facilitate the collection of evidence to support the effectiveness of social norm interventions. For those implementing social norm change interventions, we see a need to accompany these interventions with data collection that uses robust study designs, including studies that randomize selection and are conducted longitudinally.

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