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An epidemiological assessment of online groups and a test of a typology: What are the (dis)similarities of the online group types?

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ABSTRACT

A vast multitude of online groups exist, and authors have been rapidly investigating their dynamics. Extant studies have provided great information on the effects of online group membership, but limitations are often noted in these studies. Amongst the most concerning limitations are issues of generalizability. Authors are often unsure whether their results are able to generalize to other online groups, including those that are seemingly similar. For this reason, some researchers have created typologies of online groups, in hopes that online groups that fall within the same category will be generalizable; however, no study has analyzed the merit of an online group typology, and conclusions are based upon speculation. For this reason, the current study analyzed the dynamics of three different online groups, which fall within separate categories of an online group typology: a cancer support forum, a LGBT forum, and a Harry Potter fan forum. The results demonstrate that these groups vary in their properties, including group members' group identity, well-being, and social support. These results provide support for an online group typology, and precisely demonstrate in what manner these groups differ. Additionally, the results offer valuable information about the individual groups, as some variables were previously unstudied in some group types. The discovery of these previously unknown dynamics leads to the potential of new studies, which is discussed. Therefore, the current study provides important implications for future studies, as well as the interpretation of future research results.

1. Introduction

Several authors have recently shown great interest in the dynamics of online groups, typically defined as three or more people who perceive membership in some common social identity and whose dominant form of interaction is through computer-mediated communication (CMC; Baker, 2008; Howard & Magee, 2013; McKenna, 2008; McKenna & Green, 2002). Most of these researchers have investigated particular nuances of certain types of online groups. For example, Sherman and Greenfield (2012) examined the social support members received from forums designed for pregnant teen mothers. Alternatively, Welbourne, Blanchard, and Wadsworth (2013) studied member motivations for joining virtual health communities for infertility, and its relationship to particular outcomes. Studies such as these provide great information about specific facets of individual online groups, but a commonly noted limitation is these studies' generalizability. Welbourne Blancard, and Wadsworth stated, "we note that infertility groups have unique characteristics that may set them apart from virtual communities that focus on other health concerns . . . it will be important to see if our findings . . . will generalize to other virtual health communities" (2013, p. 137), demonstrating concerns over the generalizability of results to seemingly similar online groups.

To mitigate these worries over generalizability, some authors have created online group typologies (McKenna, 2008; Porter, 2004). These typologies categorize online groups based on their common characteristics, and assert that studies' results can generalize if their online group samples fall within the same category. Despite these theoretical advancements on online groups, authors still note large concerns about generalizability (Baker & O'Neil, 2002; Fulk & Gould, 2009; Welbourne et al., 2013). A reason for this apprehension is the lack of extant information on the (dis)similarities of online groups. Rarely do existing studies concurrently investigate aspects of multiple online groups, although theoretical propositions are often made (Burke, Kraut, & Joyce, 2010; Howard & Magee, 2013; Matzat, 2009). This leaves authors unsure whether observed effects actually exist in alternative online groups. The answer to this ambiguity cannot be provided with extant studies, but the current study aims to provide information on several uncertainties about online groups.

In the current study, several types of online groups are analyzed using an existing typology of online groups. This analysis largely focuses on the commonalities and differences in online groups, in order to determine the (dis)similarity of the identified group types.

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The group aspects of interest were chosen due to their importance in previous studies, and include group identity (Barker, 2009; Kim, 2009, 2010; Kim & Park, 2011), self-presentation (Bessière, Seay, & Kiesler, 2007; Jin, 2010; Jin & Park, 2009), social support (Dietz-Uhler, Bishop-Clark, & Howard, 2005; Wildermuth, 2004), and well-being (Coursaris & Liu, 2009; Lewandowski, Rosenberg, Parks, & Siegel, 2011; Tichon & Shapiro, 2003). Through studying these aspects, the (dis)similarities between the groups are uncovered, allowing inferences about the generalizability of studies' results and distinctions made between online group types. Also, the current study provides a test of a popular online group typology (Bargh & McKenna, 2004; McKenna, 2008; McKenna & Green, 2002), which has not had any investigation into its validity before. If the typology is supported, then future studies can more safely incorporate it into their studies. Finally, through this process, many novel relationships are discovered. Several of the group aspects studied have not been investigated in all types of online groups, leading to the opportunity for future studies, which are discussed.

2. Background

2.1. Existing online group typology

To address concerns over generalizability in online group studies, a survey of a wide array of online groups is needed. A vast multitude of online groups exist, making it impossible to concurrently study all online groups in existence. Instead, it is more feasible to draw comparisons between online group types based on an existing typology. Fortunately, several researchers have created typologies of online groups. Among the most popular was created by McKenna (Bargh & McKenna, 2004; McKenna, 2008; McKenna & Green, 2002), and divides online groups into four types. These four types are delineated by the online group members' primary motivations, which are often believed to be the precursor to all behaviors (Atkinson & Birch, 1970; Heckhausen & Leppmann, 1991; Lewin, 1951). Motivations of group members affect almost all aspects of the group, and shape the group's functions, experiences, and ultimate purpose. Member motivations are also seen as enduring qualities which span across several situations, and can direct the group over extended periods of time. It should be noted, however, the same motivations do not always lead to the same processes and results. The actual processes and results of group membership are impacted by extraneous variables often beyond the control of group members. Since factors such as processes and results are not under the complete control of members, it is more appropriate to categorize groups by their motivations since they are directly controllable.

Additionally, while the primary motivation of a group's members determines its label within the chosen typology, it does not completely deter group members from holding auxiliary motivations. It is possible, if not likely, for group members to have multiple motivations for membership. For instance, an individual may join a group primarily to connect with similar others, such as a Lesbian–Gay–Bisexual–Transsexual (LGBT) group, but they may enjoy the group's activities and also join for enjoyment purposes, too. These axillary motivations are important, but they are not as pivotal within groups as primary motivations. Primary motivations are shared by almost all members and are the main focus of groups, whereas auxiliary motivations may only be held by a few members. For these reasons, auxiliary motivations do not shape groups as strongly. Therefore, the existence of auxiliary motivations does not nullify a typology based on primary member motivations, despite their effects on certain group members. Given these theoretical implications of categorizing online groups by their primary motivations, below is a description of the chosen online group typology.

In no particular order, the first is stigmatized identity groups, which are composed of members with a common group characteristic (sexual orientation, fringe political belief, etc.) that is socially sanctioned or embarrassing and may be dangerous if disclosed. For example, those who are homosexual may hide their homosexuality due to social stigmas, and are unable to form in-group ties with other members; however, a stigmatized identity group provides methods to create ties with other homosexuals while allowing individuals to retain a sense of safety (Dietz-Uhler et al., 2005; Wildermuth, 2004). Stigmatized identity group members' membership is largely motivated by their need to create significant bonds with others that share their stigmatized characteristic. Second, support groups consist of members who have certain illnesses which may be rare or limit their mobility. These members are primarily motivated to discover other individuals who understand and empathize with their condition and can provide social support (Coulson, Buchanan, & Aubeeluck, 2007; Finn, 1999). The third type of online group is formed based on member's shared interests, such as online video games or special interest forums (Chak & Leung, 2004; Lim & Lee, 2009). These members generally see their interactions as leisure and a pastime, and are motivated by their enjoyment from the shared interest. This group type goes by many names, including garden-variety social group (McKenna, 2008) and virtual community (Yu & Young, 2008). Neither of these titles adequately describes this type of online group while differentiating from others, so the current article uses the term avocation groups. Although avocation group members' reasons for interacting are likely not as vital as other online group types, authors have still proposed that individuals identify with and value these groups (Billieux et al., 2013). Fourth, organizational group members are brought together to complete tasks for businesses, and their online connectivity allows them to complete projects which would otherwise be more difficult (Sosik, Avolio, Kahai, & Jung, 1998). This online group type is unlike from the other three, as these group members' primary motivation does not stem from any social desires. Instead, their primary motivation arises from their assigned tasks, and is largely transactional.

With this typology, the current study investigates several aspects of stigmatized identity groups, online support groups, and avocation groups. Organizational groups were not of interest, because they are convened by businesses for certain purposes and are not naturally occurring. This causes organizational group members' motivations to be largely transactional, whereas the other three online groups' members' motivations are largely transpersonal. The differing motivating processes results in vastly different group dynamics (Sosik et al., 1998), and many of the research questions for organizational groups are not applicable to other groups. For example, the most popular outcome of studies with organizational group samples is organizational productivity (Cogliser, Gardner, Gavin, & Broberg, 2012; Faems, Janssens, & Neyens, 2012; Frazier & Fainshmidt, 2012), which is non-existent in other types of online groups. While this group was not analyzed in the current study, future studies should certainly investigate this type of online group with alternative research questions. Now that an online group typology has been chosen along with the groups of importance, the following presents the topics which will be investigated.

2.2. Group identity

Individuals' group identity plays a primary role in how they interact with a group (Abrams & Hogg, 2004; Brewer, 1991, 2007; Tajfel & Turner, 1979). When individuals identify with a group, they will categorize and compare themselves and others

based on their group membership (Ahmed, 2007; Tajfel, Billig, Bundy, & Flament, 1971; Tajfel & Turner, 1979), causing individuals' perceptions about themselves and others to become more attuned to their group as their group identity increases. Psychological literatures have become increasingly interested in this phenomenon (Cheryan, Plaut, Davies, & Steele, 2009; Sellers & Shelton, 2003; Swim, Aikin, Hall, & Hunter, 1995; Walton & Cohen, 2007). Internet users are continuously creating online groups, and these groups play a central role in many users' lives. Extant research has investigated the role of group identity on certain types of online groups, and how this group identity forms; however, it is possible that aspects of group identity do not transfer across groups. That is, online group members' group identity may greatly differ based on the type of online group of which they are a member.

As mentioned, online groups are often formed due to a common characteristic that members share, such as sexual orientation, disease, or special interest (Finn, 1999; Lim & Lee, 2009; Wildermuth, 2004). Individuals who are a part of online groups often identify with these common characteristics, regardless of their online group membership (McDermott, Roen, & Piela, 2013); however, the importance of this common characteristic can greatly vary. Support groups and stigmatized identity groups have been proposed to be vital to group members' well-being. These groups provide valuable resources for their members, such as social support (Coulson et al., 2007; Sherman & Greenfield, 2012), and allow individuals to connect to similar others which is often unavailable offline. Many authors have proposed that these two groups are central for their group members' life (Coulson et al., 2007; Seymour-Smith, 2013). Alternatively, avocation groups are not believed to be as important for group members, since individuals largely become a part of these groups for enjoyment (Kock, 2008; Trepte & Reinecke, 2010). They likely do not provide as critical of a role to their members. For these reasons, it is believed that support and stigmatized identity group members have higher group identities than avocation group members, with both their online groups and respective offline groups.

Hypothesis 1. Support group and stigmatized identity group members will report higher group identities than avocation group members.

Hypothesis 2. Support group and stigmatized identity group members will report higher offline group identities than avocation group members.

2.3. Social support and well-being

Several reasons cause individuals to become motivated to join online groups, particularly the benefits members expect to receive. Among the most important benefits are social support and well-being, which online groups have already been shown to impact (Fukkink, 2011; Love et al., 2012; Schiffrin, Edelman, Falkenstern, & Stewart, 2010). In fact, studies have shown that some groups are formed largely to provide social support (Cummings, Sproull, & Kiesler, 2002; Michinov, Michinov, & Toczek-Capelle, 2004; Smith, Egbert, Dellman-Jenkins, Nanna, & Palmieri, 2012). In support groups, individuals with certain diseases or conditions seek others online to emphasize with their condition. Once these members receive social support, they report better well-being (Coursaris & Liu, 2009; Lewandowski et al., 2011; Tichon & Shapiro, 2003). This social support is important for these group members, which further motivates their online group membership (Grisset & Norvell, 1992; Smith, Murphy, & Coats, 1999). Similarly, stigmatized identity group members often seek social support for their stigmas, and feel better about themselves once they receive it (Dietz-Uhler et al., 2005; Wildermuth, 2004). These two groups likely receive high amounts of social support from their interactions, while the other type of online group, avocation groups, do not. Avocation groups usually do not have a characteristic which causes them to seek social support. Instead, they seek others online largely for enjoyment (Kock, 2008; Trepte & Reinecke, 2010). Therefore, it is believed that support groups and stigmatized identity group members will report higher levels of social support received from their online groups, compared to avocation group members.

Hypothesis 3. Support groups and stigmatized identity group members will report higher online social support received than avocation group members.

Additionally, in regards to social support, stigmatized identity group members are often forced to conceal their common characteristic offline. While they may receive great discomfort from hiding their characteristic, they are unable to express their discomfort offline, which then causes further discomfort and creates a negative well-being spiral (Frable, Platt, & Hoey, 1998; Shih, Young, & Bucher, 2013; Troiden, 1989). Fortunately, for these individuals, the Internet allows them to express their discomfort online without risking their identity and well-being. Alternatively, the other two types of online groups consist of members who can receive social support for their problems offline, and their online group is not their sole outlet of social support. Therefore, it is believed that support and avocation group members receive higher offline social support than stigmatized identity group members. Also, it is predicted that stigmatized identity group members disclose more about themselves online compared to support and avocation group members.

Hypothesis 4. Support and avocation group members will receive higher offline social support than stigmatized identity group members.

Hypothesis 5. Stigmatized identity group members will disclose more information about themselves than support and avocation group members.

Finally, a large portion of online group research is focused on member well-being, especially research performed on support and stigmatized identity groups (Kaplan, Salzer, Solomon, Brusilovskiy, & Cousounis, 2011; Kiesler & Kraut, 1999; Smith et al., 2012). This is appropriate, as these two groups have shared characteristics which is detrimental to member well-being; however, it is unknown whether these two groups substantially differ in their well-being, since no study has concurrently compared the two. Additionally, no study has researched avocation group member well-being, as they have no common detriment to their well-being. Together, it is unknown whether any certain type of online group actually has substantially lower well-being, or that research has only been studying one type due to its researchers' assumptions. Therefore, the current study concurrently analyzes the three types of groups to determine whether one type has substantially lower well-being. Given past research, it is expected that avocation group members will have higher well-being than support and stigmatized identity groups.

Hypothesis 6. Avocation group members will have higher well-being than support groups and stigmatized identity groups.

2.4. Self-presentation

An individual's self presentation can greatly change their perceptions about their relationship with a group, as well as their

perceptions about themselves (Murry, Berkel, Brody, Miller, & Chen, 2009). Several factors related to self-presentation are relevant to online groups. When individuals interact online, they are largely anonymous. This allows Internet users to self-present any part of themselves, which has important implications for the concept of the malleable self. The idea of the malleable self is described by Jin (2010) below:

> "The self is a malleable construct; people have a need for self-presentation, act differently in different situations, and are influenced by social roles, cues, and situational factors ... In emerging interactive media, the malleable nature of the self becomes even more important as different aspects of the self can be primed such as physical features, social roles, abilities, or group memberships."

Since CMC gives individuals the opportunity to change their self-image, the malleable self is brought to the forefront of interactions. As research has shown, individuals often self-present when interacting through CMC, instead of presenting their actual self (Bessière et al., 2007). This self-presentation can alter individual's experiences and identification with their online persona (Jin, 2010; Jin & Park, 2009). While extant studies have provided great information on this topic, research has yet to investigate the methods of self-presentation individuals employ online, along with identifying which members may self-present in certain ways. To answer these two questions, the current article pulls from Self-Discrepancy Theory.

Self-Discrepancy Theory states that individuals possess three distinct concepts of the self (Higgins, 1987; Higgins, Bond, Klein, & Strauman, 1986; Strauman, 1996). The first is the actual self, which is an individual's true identity. The second is the ideal self, which is an individual's desired identity. The third is the ought self, which is an individual's perception of society's desired identity. Self-Discrepancy Theory has most often been used to predict depression and anxiety (Manian, Strauman, & Denney, 1998; Strauman, 1996), but it can also be used to describe modes of self-presentation. When interacting, an individual may present their actual self, but they can also pretend to be their ideal or ought self to others. CMC allows individuals to interact in relative anonymity, and Internet users can easily present their ideal or ought self without fear of their true identity being discovered. Even while using websites which members are identified through their actual identities, such as Facebook or dating websites, individuals still present more appealing versions of themselves (Hong, Tandoc, Kim, Kim, & Wise, 2012; Mehdizadeh, 2010; Utz, Tanis, & Vermeulen, 2012). While many online users likely self-present, it is possible that certain types of online groups will contain members that systematically self-present in similar manners.

As mentioned, avocation group members are not bound by any real world characteristics, and are able to fully self-present. It is believed that these members may try to appeal to others through presenting their ought self, possibly to be liked through their Internet persona. Alternatively, support group members have a common real-world characteristic which ties them to their online group. When interacting online, many of their interactions are based on this characteristic, causing them to be more tied to their actual self. It is believed that these group members present their actual self. Finally, stigmatized identity group members are also brought together by a shared characteristic, but they are often unable to express this characteristic offline. For this reason, it is believed that these group members present their ideal self when interacting with their online group.

Hypothesis 7. Avocation group members will be more likely to present their ought self than support group and stigmatized identity group members.

Hypothesis 8. Support group members will be more likely to present their actual self than avocation group and stigmatized identity group members.

Hypothesis 9. Stigmatized identity group members will be more likely to present their ideal self than support group and avocation group members.

3. Method

3.1. Participants

To sample from each type of online group, three types of online groups were sampled: Lesbian–Gay–Bigender–Transsexual (LGBT) interest forums, cancer support forums, and Harry Potter fan forums. The LGBT interest forums represent stigmatized identity groups; the cancer forums represent support groups; and the Harry Potter fan forums represent avocation groups. Although several online groups can be categorized into each online group type, LGBT and cancer online groups are the most often studied for stigmatized identity groups and support groups, respectively, which allows the results of the current study to generalize to previous results (Blank & Adams-Blodnieks, 2007; Crowson & Goulding, 2013; Klemm et al., 2003). No dominant group has been studied for avocation groups, and the decision to use Harry Potter fan forums was made because they are characteristic of avocation groups. Also, a deliberate choice was made to study a consistent form of online group (forum members) to keep comparisons between groups as constant as possible.

For each type of online group, several forums were contacted to ensure a diverse sample. To obtain access to these forums, admins and moderators were contacted, and permission was requested to post the survey on their forum. Once permission was obtained, a link to the survey was posted, and any user browsing the website could participate in the survey. The informed consent was given before anyone could participate, and two questions were added to check for insufficient motivation when responding. With this method, a clear response rate statistic cannot be given; however, some information can be provided.

For the LGBT group members, 210 individuals accessed the survey, but 139 were removed from analyses. Seven individuals were removed due to their refusal of the informed consent, 130 were removed because they answered two or fewer questions, and two failed the attention check. This left 71 participants. For the cancer group members, 100 individuals opened the survey, but 57 were removed from analyses. Five were removed due to their refusal of the informed consent, 49 were removed because they answered two or fewer questions, and three failed the attention check. This left 43 participants. Finally, for the Harry Potter group members, 90 individuals opened the survey, but 41 were removed from analyses. Six individuals were removed due to their refusal of the informed consent, 30 were removed because they answered two or fewer questions, and five failed the attention check. This left 49 participants. In total, 163 participants participated in the current study.

Few statistical tests could be performed to compare participants that withdrew to those that did not, since most that withdrew only completed two or fewer questions; however, theoretical reasons could provide inferences on whether this participant attrition poses any systematic biases to the results. As mentioned, the link to open the survey was posted to several message boards. Any visitor to the website could open this link. It is possible, if not probable, that many individuals that opened the link were only occasional visitors to the website, rather than regular website

members. These individuals would be likely to withdraw, since they would not have the commitment to answer questions about the online groups, and may not know how to answer some questions about group membership. Although attrition is often seen as problematic, it may be beneficial in this case. The current study was primarily interested in group differences between certain online group members, and much less consideration was given towards comparing individuals who were only visitors to these websites. Although there is little that can be done to ensure that members, rather than visitors, were those that completed the current survey, previous studies demonstrate that those who identify with their groups are more likely to participate in group activities (Dawes, Van De Kragt, & Orbell, 1988; Dovidio, Gaertner, & Validzic, 1998; Kramer & Brewer, 1984). Therefore, these empirical findings support the notion that the attrition within the current study is not detrimental.

Additionally, the participant withdraw rate within the current study is comparable to previous studies using similar recruitment methods (Etter & Perneger, 2000; Hasler, Tuchman, & Friedman, 2013; Sánchez-Fernández, Muñoz-Leiva, & Montoro-Ríos, 2012).

3.2. Measures

A description was given before each measure which read, "'this online group' refers to the community of the website that directed you to this survey." Unless otherwise noted, each item was presented with a 7-point Likert scale. Also, reported reliabilities are those found in the current study, as many of the measures have not been tested on online groups.

3.2.1. Online group identity

To measure online group identity, the online group identity Scale (Howard & Magee, 2013) was administered. This scale consists of 14 questions, adapted from Leach et al. (2008), which form five first-order factors and two second-order factors. An example question is, "I feel committed to _____," and researchers are meant to insert the group of interest into the blank. For the current study, the phrase "this online group" was inserted into the blank, and participants were repeatedly told that "this online group" refers to the "community of the website which led you to this survey." The scale had a Cronbach's alpha of .91.

3.2.2. Online group social support

A modified version of the Multi-Dimensional Scale of Perceived Social Support (MSPSS) was given to measure online group social support (Zimet, Dahlem, Zimet, & Farley, 1988). The original measure records social support from three different sources: family, friends, and special other. The modified scale measures social support received from the online group, and social support received from a special other in the online group. For example, the question, "My family is willing to help me make decisions," was modified to read, "This online group is willing to help me make decisions." Although the original measure is 12 items, the modified version was reduced to 10 items because some of the family and friends social support items were repetitive when changed to gauge online group social support. The scale's Cronbach's alpha was .95.

3.2.3. Actual, ideal, and ought self online interactions

Nine items were created to measure whether individuals present their actual, ideal, or ought self when interacting on their online community. Three items asked about actual self interactions, three items asked about ideal self interactions, and three items asked about ought self interactions. An example question for actual self interactions is, "When interacting with this online group, I act like I really am." Cronbach's alpha values for the actual self-presentation scale, the out self-presentation scale, and ideal self-presentation scale were .69, .91, and .85, respectively.

Although the Cronbach's alpha for the self-presentation scale is below the traditional cutoff (.70), its value of .69 is not overly concerning. This figure only barely misses the cutoff, and several previous studies have employed measures with similar or lower reliabilities (Fox & Warber, 2013; Graham & Gosling, 2013; Kuss, Louws, & Wiers, 2012).

3.2.4. Online disclosure

Five items were created to gauge the extent that individuals disclose information about themselves to their online groups. An example item is, "I tell this online group things about myself that I would not tell those I know offline or 'in real life.'" The Cronbach's alpha for this scale was .95.

3.2.6. Offline group identity

Leach et al.'s (2008) measure of group identity was used to measure participant's offline group identity. Depending on the website which users used to access the survey, they were given different reference groups for their offline identity. For those who were recruited from cancer support websites, their reference group was "cancer patients and survivors." Those from LGBT interest websites were told, "LGBT people." Finally, those from Harry Potter fan forums were given "Harry Potter fans" as their reference group. This scale had a Cronbach's alpha of .89.

3.2.7. Offline social support

To measure offline social support, the original 12-item MSPSS (Zimet et al., 1988) was administered. This measure's Cronbach's alpha was .93.

3.2.8. Core self-evaluations

To measure Core Self-Evaluations (CSEs), Judge, Erez, Bono, and Thoresen (2003) CSE scale was administered. The scale consists of four dimensions, neuroticism, self-esteem, self-efficacy, and locus of control. Example items are "Overall, I am satisfied with myself" (self-esteem) and "I determine what will happen in my life" (locus of control). The overall Cronbach's alpha for this measure was .90.

3.2.9. Stress, depression, and anxiety

Antony, Bieling, Cox, Enns, and Swinson (1998) scale was given to measure stress, depression, and anxiety. This measure consists of 21 items, with 7 measuring each subdimension. The Cronbach's alpha for the stress subscale was .88, the Cronbach's alpha for the depression subscale was .96, and the Cronbach's alpha of the anxiety subscale was .89.

3.2.10. Demographic information

Gender, age, ethnicity, location, time spent online, time spent on website that directed them, years on the Internet, and months using website that directed them were recorded for the current study.

4. Results

Correlations are presented in Table 1 for each type of online group. Scale reliabilities are given on the diagonal of this table, and these reliabilities were calculated with all three samples combined. Due to the large amount of correlations presented, it is very likely that several correlations are significant due to Type II error. For this reason, the current study does not use this information to provide support for hypotheses, and it is all exploratory in nature; however, this should not preclude future studies from further investigating these correlations. They can be valuable sources,

while they are not robust enough data to support hypotheses in the current study.

To test the hypotheses presented, several Univariate ANOVAs were performed, with the type of online group as the independent variable, the aspects of interest as the dependent variables, and controlling for age and gender. As evident in Table 2, most of the online group aspects of interest were statistically significant. For the all results, LSD post hoc tests were performed to determine which groups were substantially higher (or lower) in the variables of interest when compared to the other groups. Each result is noted below along with its corresponding hypothesis.

First, Hypothesis 1 predicted that support and stigmatized identity group members would report higher online group identities than avocation group members. An Univariate ANOVA analyzing the overall group differences in online group identity was statistically significant ($F = 9.521$; $df = 161$; $p < .001$). Stigmatized identity and avocation group members' comparisons with support groups resulted in significant post hoc tests (both $p < .05$), while their comparison with each other was also significant ($p < .001$). These results support Hypothesis 1.

Second, Hypothesis 2 predicted that support group and stigmatized identity group members will report higher offline group identities than avocation group members. The Univariate ANOVA results demonstrated a significant group difference ($F = 10.335$; $df = 161$; $p < .001$). Post hoc tests revealed that support group members had higher offline group identities than stigmatized identity group members ($p < .01$) and avocation group members ($p < .001$), but the comparison between stigmatized identity group members and avocation group members was only marginally significant ($p = .53$). These results support Hypothesis 2.

Third, Hypothesis 3 predicted that support and stigmatized identity group members would receive more online social support than avocation group members. Once again, univariate ANOVA results comparing groups were statistically significant ($F = 39.880$; $df = 161$; $p < .001$). Support and stigmatized identity group members' comparisons with avocation groups resulted in significant post hoc tests (both $p < .001$), while their comparison with each other was non-significant ($p > .05$). These results support Hypothesis 3.

Fourth, Hypotheses 4 predicted that support and avocation group members will receive more offline social support than stigmatized identity group members. ANOVA results comparing groups were statistically significant ($F = 9.358$; $df = 159$; $p < .001$). Post hoc tests revealed that support and avocation group members receive more offline social support than stigmatized identity group members (both $p < .001$), and their comparison with each other was non-significant ($p > .05$). These results support Hypothesis 4. The results of Hypothesis 3 and 4 are presented in Fig. 1.

Fifth, Hypothesis 5 predicted that stigmatized identity group members will disclose more information about themselves than support and avocation group members. An ANOVA comparing the groups revealed was statistically significant ($F = 27.732$; $df = 161$; $p < .001$). Stigmatized identity group members' comparisons with the other two groups results in significant post hoc tests (support group $p < .01$; avocation group $p < .001$). Additionally, the comparison between support and avocation group members was also significant ($p < .01$). These results support Hypothesis 5.

Sixth, Hypothesis 6 predicted that avocation group members will have higher well-being than support and stigmatized identity group members. Four measures of well-being were administered. Univariate ANOVAs comparing CSEs ($F = 6.948$; $df = 160$; $p < .01$), and depression ($F = 3.347$; $df = 161$; $p < .05$) of the groups were statistically significant, while an ANOVA comparing the anxiety ($F = .962$; $df = 161$; $p > .05$) and stress ($F = 1.126$; $df = 161$; $p > .05$) of the groups was not statistically significant. Post hoc tests revealed stigmatized identity group members have significantly lower CSEs than support and avocation group members (both $p < .01$), while the comparison between support and avocation group members was not significant ($p > .05$); stigmatized identity group members had higher levels of depression than support and avocation group members (both $p > .05$), while the comparison between support and avocation group members was not significant ($p > .05$). The overall ANOVA gave support for Hypothesis 9, but the post hoc tests indicated that the hypothesized direction of the group differences was not correctly predicted. Instead, support group members had the highest well-being, avocation group members were in the middle, and stigmatized identity group members had the lowest well-being of all group members. A visual display of these findings is presented in Fig. 2.

Lastly, Hypotheses 7, 8, and 9 all predicted that certain online group members would systematically present themselves in a certain manner. All group means for the amount of actual, ideal, and ought self-presentation were as predicted; however, all Univariate ANOVA results testing these differences were non-significant ($p < .05$). Therefore, these results fail to support Hypotheses 7, 8, and 9.

5. Discussion

The primary research question of the current article was to assess the overlapping qualities of multiple online groups. To answer this question, members' group identity, self-presentation, social support, and well-being of multiple types of online groups was investigated. The results illustrated many notable group differences. Particularly, avocation group members had lower offline and online identities than support and stigmatized identity group members. Also, support and stigmatized identity group members were shown to systematically self-present, while avocation group members did not. All group members had differing levels of social support received online, but stigmatized identity group members had the lowest offline social support. This may be the reason why this group's members also had the lowest well-being of all, and disclosed the most about themselves online. Given these results, several notes should be presented.

First, the results provide evidence that the distinctions between online group types are substantial. Most existing typologies are based upon purely theoretical claims, without supporting data. The current study demonstrated that an online group typology presented by McKenna (Bargh & McKenna, 2004; McKenna, 2008; McKenna & Green, 2002) delineates groups with meaningful differences. That is, substantial differences exist in three of the four the different group types, and the fourth type of online group (organizational groups) serve purposes which are entirely different from the other three. For almost all variables of interest, significant group differences were found. Many of these, particularly online group social support and disclosure, exhibited large effect sizes (Cohen, 1992). Therefore, it seems that McKenna's typology of online groups is warranted. When researching online groups, future studies should consider how their researched online group falls into this typology, and if it has a notable impact on conclusions they can make from their studies.

Second, this data also allows inferences to be made about the generalizability of previous study results. Notably, few aspects were consistent across all three group types; however, some were comparable in two of the three groups. For example, support and stigmatized identity group members reported similar levels of online group identity. This insinuates that members of these two groups likely have similar levels of attachment to their groups, and likely have similar dynamics. Alternatively, avocation groups had notably lower levels of online group identity. Effects that involving online group identity may be true for the other two types

Table 1
Correlations between all study variables separated by group.

	1	2	3	4	5	6	8
1. Online group identity	.91						
2. Online group social support	.64**						
	.54**	.95					
	.40**						
3. Actual	.24*	.28*	.69				
	.11	−.03					
	−.04	−.23					
4. Ought	.27*	.07	−.14	.91			
	−.03	.04	−.29				
	.07	.01	−.24				
5. Ideal	.32**	.07	−.02	.16	.85		
	−.21	−.22	.02	.31*			
	.09	−.11	.04	.08			
6. Disclose	.33**	.25*	−.21	.09	.19	.95	
	.19	.21	−.21	.00	−.13		
	.63**	.48**	.05	−.01	−.13		
8. Offline group identity	.53**	.22	.20	.17	.16	−.01	.89
	.34*	.14	−.09	.06	.14	−.03	
	.50**	.21	−.09	.10	.37**	.19	
9. Offline social support	.21	.19	.17	−.04	.11	−.15	.15
	.16	.34*	−.01	.09	−.19	−.13	.18
	−.27	.00	.13	.09	.05	−.26	.06
10. CSE	.04	.10	.23	−.14	.10	−.07	−.10
	−.12	−.07	.19	.02	−.01	−.15	−.02
	−.11	−.02	.13	−.12	−.14	−.20	−.19
11. Stress	.08	−.05	−.14	.05	.15	.14	.31**
	.22	.05	−.39**	−.07	−.02	.13	.29
	.42**	.32*	−.27	.20	.07	.46**	.29*
12. Depression	−.09	−.11	−.17	.12	.07	.04	.03
	−.04	.05	−.01	−.04	−.01	−.10	−.15
	.44**	.13	−.22	.16	.05	.52**	.17
13. Anxiety	.08	.04	−.14	−.04	.00	.12	.29*
	.24	.23	−.21	−.13	.11	.22	.24
	.52**	.20	−.13	.27	−.09	.47**	.13
14. Time online (h/week)	.02	.08	.01	.03	−.11	.11	−.01
	−.02	.10	.09	−.14	.03	−.10	−.30
	.25	.19	−.10	.24	.05	.29	−.01
15. Time with online group	.32**	.24	−.01	−.02	.20	−.04	.23
	.09	.21	−.00	−.06	−.06	.01	.10
	.38**	.17	−.11	.04	−.09	.34*	.22
16. Internet User (years)	−.24	−.33**	−.08	.04	−.18	−.27*	.08
	−.19	−.12	.00	.13	.06	.15	−.07
	−.31*	−.07	−.02	.12	−.02	−.14	−.35*
17. Online group member (months)	.15	.22	.08	.10	−.20	−.12	−.02
	.11	.15	−.13	.04	−.23	−.20	−.17
	.21	.42**	−.11	−.01	−.10	.29*	−.09

	9	10	11	12	13	14	15	16	17
9. Offline social support	.93								
10. CSE	.43**	.90							
	.35*								
	.33*								
11. Stress	−.23	−.59**	.88						
	.02	−.59**							
	.18	−.55**							
12. Depression	−.50**	−.72**	.76**	.96					
	−.34*	−.63**	.29						
	−.47**	−.68**	.71**						
13. Anxiety	−.26*	−.43**	.59**	.56**	.89				
	.01	−.50**	.28**	.33*					
	−.19	−.43**	.63**	.65**					
14. Time online (h/week)	−.32**	−.30*	.23,	.37**	.20	N/A			
	.12	−.12	.08,	.25	−.02				
	−.19	−.06	.11	.17	.24				
15. Time with online group	−.04	−.08	.27*,	.21	.40**	.46**	N/A		
	.14	−.17	.18,	.34*	.08	.60**			
	−.03	−.13	.31*	.39**	.57**	.55**			
16. Internet user (years)	.13	.01	−.03,	−.10	−.10	−.03	−.13	N/A	
	.07	−.06	−.07,	.09	−.07	.41**	.11		
	.36*	.24	−.01	−.12	−.05	−.03	.11		
17. Online group member (months)	.03	−.08	−.07,	.02	−.06	.22	.08	.21	N/A
	−.13	−.13	−.15,	.02	−.06	−.25	−.17	−.45**	
	−.09	.03	.24	.24	.23	.30*	.38**	.24	

The first presented correlation is using LGBT online group participants.
The second is using cancer support online group participants.
The third is using Harry Potter online group participants.
* $p < .05$.
** $p < .01$.

of online groups, but are likely not present for avocation groups. Other similar differences arose in the current study, but each will not be explicitly mentioned. Instead, Table 2 should be examined to denote the differences, and authors should pay close attention to the similarities and differences between the online groups that they wish to generalize.

Third, the current study provides a large amount of exploratory data. Although some of the data, such as the presented correlations, are not robust enough to support hypotheses, they should certainly be used to create directions for future studies. Also, future studies should investigate the reasons why certain online groups had higher or lower values of the variables of interest. The current

Table 2
Univariate ANOVA results of several outcome variables on online group types while controlling for age and gender.

	LGBT E. M. mean (S.E.)	Cancer support E. M. mean (S.E.)	Harry potter E. M. mean (S.E.)	Group F (Par. η^2)	Age F (Par. η^2)	Gender F (Par. η^2)	Total R^2
1. Online group identity	$5.33^{2,3}$(.12)	$5.81^{1,3}$(.16)	$4.96^{1,2}$(.13)	9.251***(.106)	7.350**(.045)	.664(.004)	.12
2. Online group social support	5.13^{3} (.15)	5.67^{3}(.21)	$3.60^{1,2}$(.17)	39.880***(.338)	3.304(.021)	.933(.006)	.34
3. Actual	5.81(.13)	6.19(.18)	5.75(.14)	1.992(.025)	.058(.000)	.108(.001)	.04
4. Ought	2.68(.19)	2.59(.25)	2.94(.20)	.811(.010)	.032(.000)	.012(.000)	.01
5. Ideal	5.25(.19)	4.86(.25)	4.76(.20)	1.624(.021)	1.589(.010)	(.059)(.000)	.06
6. Disclose	$5.21^{2,3}$(.21)	$3.92^{1,3}$(.29)	$2.87^{1,2}$(.23)	27.732***(.262)	2.218(.014)	.192(.001)	.33
7. Offline group identity	5.26^{2}(.11)	$5.83^{1,3}$(.15)	4.94^{3}(.12)	10.335***(.117)	10.450**(.063)	9.591**(.058)	.16
8. Offline social support	$4.61^{2,3}$(.17)	5.82^{1}(.23)	5.52^{1}(.19)	9.358***(.108)	.979(.006)	.041(.000)	.20
9. CSE	$3.86^{2,3}$(.14)	4.78^{1}(.19)	4.43^{1}(.15)	6.948**(.082)	.183(.001)	1.837(.012)	.16
10. Stress	2.17(.10)	1.96(.13)	1.97(.10)	1.126(.014)	1.570(.010)	1.560(.010)	.06
11. Depression	$2.06^{2,3}$(.12)	1.59^{1}(.16)	1.64^{1}(.13)	3.347*(.041)	3.042(.019)	.199(.001)	.13
12. Anxiety	1.54(.09)	1.46(.12)	1.37(.09)	.962(.012)	2.153(.014)	1.739(.011)	.05
13. Group size	$2.96^{2,3}$(.18)	4.02^{1}(.25)	3.61^{1}(.19)	5.559**(.067)	1.507(.010)	.238(.002)	.08
14. Time online (h/week)	27.13(2.42)	24.45(3.24)	28.30(2.64)	.418(.005)	1.347(.009)	1.925(.013)	.04
15. Time with online group	10.14^{2}(1.25)	5.57^{1}(1.63)	7.34(1.34)	2.205(.029)	1.017(.007)	.540(.004)	.08

Note: E. M. Mean = Estimated Marginal Means.
Par. η^2 = Partial ETA Squared.
Superscripts represent significant pairwise comparisons based on LSD post hoc tests at a minimum of $\alpha = .05$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

article proposed some causal mechanisms for the differences, but they cannot be supported without data.

Together, it is believed that these implications will be important to future research. Nevertheless, while the current study provides many benefits to researchers, several limitations should be mentioned.

5.1. Limitations

Many limitations of the current study should be addressed. First, although the overall sample was appropriate, some of the subgroup samples were modest. For example, the support group sample only consisted of 43 individuals. While it would be beneficial if this number were higher, it is above the required size to avoid a great loss of power. For the current study, a post hoc power analysis, using G*Power (Faul et al., 2009), indicated that the study had power above .80, which is above the suggested cutoff (Cohen, 1988). This is even more noteworthy, given that LGBT and cancer support group members are a specialized sample. It is difficult to obtain participants who are members of LGBT and cancer support groups. Given these considerations, this sample size seems appropriate.

Second, within each type of online group, only one subset within that type was used. For example, only cancer support forums were used to represent support groups. This was purposefully done, because the groups chosen to represent support and stigmatized identity groups are the most studied for those types of groups; however, it is likely that different group dynamics exist within these types. For example, infertility support groups may have different properties than cancer support groups, or certain cancer support groups may be largely different from even other cancer support groups. While this may be the case, a comparison of all online groups was not the purpose of the current study. Instead, the current study only sought to compare the three general group types, in order to make broader inferences.

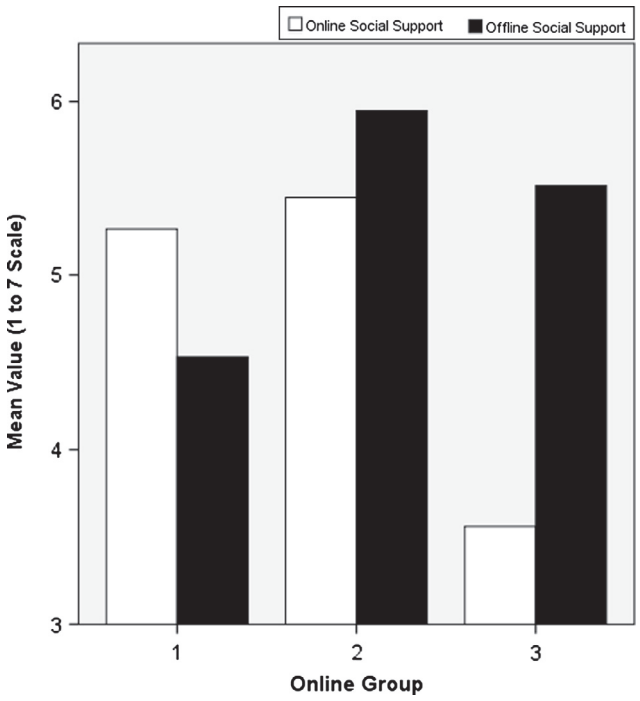
Third, all data collected was through a survey design. Authors have previously noted the ramifications of single-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Although some of these biases were alleviated through allowing the participants to complete the survey during their own time and keeping responses confidential and anonymous, some biases certainly remain. This was unavoidable given the circumstances. It is difficult to obtain large samples from the groups of interest. If an alternative research method was used, such as multiple surveys or alternative measures, then many participants would like withdraw or refuse to participate. Given these concerns, it was decided that retaining a larger sample was more important than alleviating common methods bias.

Fourth, all data collected in the current study was cross-sectional. Many aspects of the differences between online groups can only be discovered through a longitudinal design, and understanding the transition of member's feelings over time. The current study only sought to understand many preliminary differences in online group types. Now that some of these differences have been discovered, future studies should investigate how online group dynamics differ in their longitudinal development depending on the group type.

5.2. Future directions

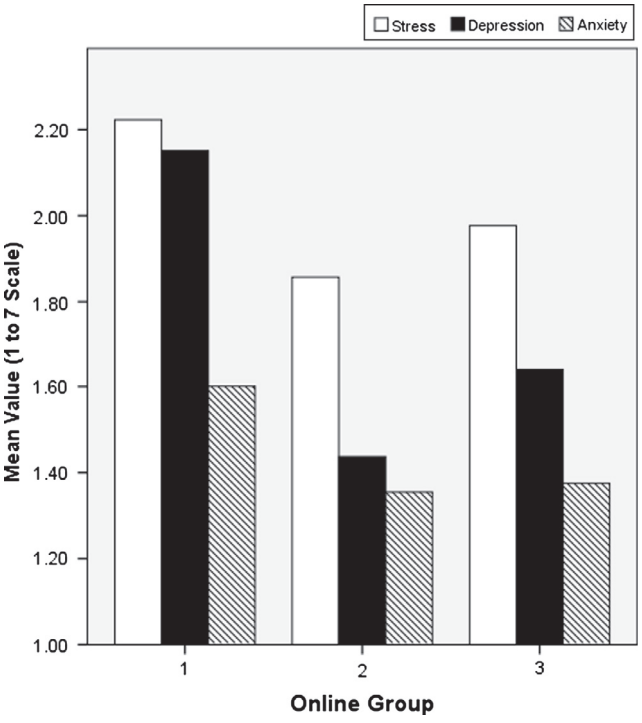
First, the current study investigated group differences of three types of online groups. Although the results provide great information on the comparison of three broad online group types, inferences cannot be made about the comparison of similar online groups. For example, Welbourne et al. (2013) noted that their results on infertility support groups may not generalize to other support groups, and the current study cannot provide much information about this concern; however, it can support that their results may be have similar effects in stigmatized identity groups, since no significant group differences was seen between support and stigmatized identity groups in regards to online social support. Determining this difference was the primary goal of the study, and future research should investigate the nuances of more similar online groups.

Also, many studies have looked into the well-being of certain online groups, largely cancer or suicide support groups (Cummings et al., 2002; Fukkink, 2011; Love et al., 2012; Michinov et al., 2004; Schiffrin et al., 2010; Smith et al., 2012); however, the current study showed that individuals in support groups actually have the highest well-being of all. Instead, stigmatized identity group



Group 1 – LGBT Group
Group 2 – Cancer Support Group
Group 3 – Harry Potter Group

Fig. 1. Offline and online social support separated by online group type.



Group 1 – LGBT Group
Group 2 – Cancer Support Group
Group 3 – Harry Potter Group

Fig. 2. Stress, depression, and anxiety separated by online group type.

members reported significantly lower well-being for three different outcome variables. These results should direct researchers to more thoroughly investigate the dynamics of well-being in stigmatized identity groups, particularly LGBT online groups. Members of these groups suffer from social stigmas, and may be resorting to the Internet to received understudied social support. It would be important to determine whether this social support is effective over time, the factors that cause individuals to reach out to these groups, as well as many other notable factors.

Lastly, many considerations for future longitudinal studies should be made. Initially, it may be important to discover why members in the group types are systematically different. For example, are certain people are attracted to these types of online groups, or does the group's culture retain certain individuals while pushing out others? Or, is it a mix of the two, similar to Industrial/Organizational Psychology's Attraction–Selection–Attrition design? The answer to this question could provide insights into the reasons for online group type differences, which could then lead to a further understanding of their form and function.

6. Conclusion

The goal of the current study was to test a popular online group typology, and address several concerns about the generalizability of online group studies. To accomplish this, three different types of online groups were surveyed: support groups (cancer support forum), stigmatized identity groups (LGBT forum), and avocation groups (Harry Potter fan forum). The results show that the groups differed on many aspects, including group identity, self-presentation, well-being, and social support; however, some similarities were sporadically seen across groups. These results indicate that the online group typology is merited, and future studies should take it into consideration when judging the generalizability of their studies. Also, several of the relationships discovered in the current study should be probed further, as noted above. Therefore, the results of the current study are hoped to guide researchers on many aspects of their future studies.

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