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# Culture and emotion in Paralympic swimming medalists

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**ABSTRACT**

The purpose of the present study was to examine if cultural identity was related to the emotional experiences of Paralympic ($N = 83$) swimmers' upon winning medals at the 2016 Paralympic Games. Paralympic athletes' countries ($N = 5$) were scored on Hofstede's (2011) six cultural dimensions and athletes who won medals had their facial expressions analyzed to determine levels of basic emotions (i.e., happiness, sadness, anger, surprise, disgust, fear, and neutral) based on Ekman's (1993) neuro-cultural theory of emotion. After controlling for medal won, and time and place expectation proxies, we found that happiness was negatively associated with long/short term orientation ($r = –0.313$, $p < 0.004$) and positively linked to indulgence/restraint ($r = 0.210$, $p < 0.06$). The emotion of neutral was positively associated with power distance ($r = 0.239$, $p < 0.032$) and long term/short term orientation ($r = 0.290$, $p < 0.009$) while being negatively linked to indulgence ($r = –0.276$, $p < 0.013$). Based on an abductive theory of the scientific method (Haig, 2005; 2008) we formed plausible theory-based explanations for our findings and concluded, given our study is the first of its nature, that researchers should continue this line of inquiry.

**KEYWORDS**

sport; culture; identity; disability

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## INTRODUCTION

Cultural identity is one of many potential identities that individuals, including athletes, embrace and take pride in. Almost thirty years ago Duda and Allison (1990) urged sport psychology researchers to consider the role of culture in their work. Unfortunately, for many years, Duda and Allison's (1990) call was largely ignored with a few exceptions (e.g., Martin & Gill, 1995). However, in the last few years more and more scholars have advocated for a "cultural turn" and the incorporation of cultural considerations into sport psychology research (Ryba et al., 2010). Within disability sport psychology researchers have examined athletic identity over the last 25 years ranging from non-elite adolescent athletes to Paralympians (Martin, 2017, 2015, 2013; Guerrero & Martin, 2018; Martin et al., 1995; Martin et al., 1994; Martin & Vitali, 2011). However, research examining other identities such as "cultural" identity in disability sport is, to our knowledge, non-existent.

Similarly, with few exceptions, research on emotion in disability sport, especially spontaneous emotion in ecologically valid settings, is also scarce (e.g., Martin et al., 2019; Martin, 2021). Hence, to address this research gap we developed the current study to examine a cross-cultural theory of emotion (Matsumoto, 1991) with Paralympic athletes. Our findings are of value because they extend both basic emotion theory and cultural theory into an ecologically valid setting with a sample previously unexamined in this type of work. Our findings also have applied value as Paralympic coaches should be alert to the potential influence of culture on emotional experiences.

In a recent paper examining the emotional experiences of Paralympians Martin et al. (2019) found that Paralympians from collectivistic cultures (e.g., China) expressed less happiness, based on facial expressions, compared to athletes from more individualistic (e.g., USA) cultures.

In the current paper we expand on the work of Martin and colleagues (2019) by looking beyond the singular emotion of happiness and the single cultural dimension of individualism/collectivism. Examining the full range of emotions athletes experience and the multiple cultural dimensions constituting cultural identity provides a much more comprehensive picture of the ways in which they might be inter-related, relative to examining just one emotion and one cultural dimension. In the current paper we examine seven basic emotions (i.e., happiness, surprise, anger, sadness, disgust, fear and neutrality) based on a neurocultural theory of emotion (Ekman, 1992, 1993; Ekman & Friesen, 1971; Elfenbein & Ambady, 2002; Matsumoto, 1991). A neurocultural theory of emotion proffers that emotions are universal but culture specific display rules influence the expression of emotions as a function of the social context. The Paralympics is an ideal setting for the current study because so many different countries are represented that vary on the six major cultural dimensions developed by Hofstede (Hofstede, 2011; Minkov & Hofstede, 2011) and athlete's performance in a high stakes setting elicits varied and intense emotion. Additionally, as Hofstede argues (2013) research in this area should use matched samples. In the current study individuals from each country are all Paralympians. Definitions of the six dimensions upon which cultures vary are as follows.

First, power distance (PDI) focuses on the inequality of power distribution; where, on the large PDI end, individuals agree that everyone has a different (i.e., unequal)

place on the hierarchy and no other explanation or argument is needed. Large PDI means there is an understanding and acceptance of inequality among members of the society. Small PDI, however, challenges inequality. In a culture with small PDI members have an equal distribution of roles throughout the hierarchy and no person is more powerful than another.

Second, individualism/collectivism (IDV) emphasizes individualism at the high end with a low emphasis on collectivism. On the high end individuals emphasize taking care of themselves and their immediate family and one's personal opinion is important. On the low end, IDV deals greatly with the idea of "we" where people are part of an extended family or clan and opinions are determined by the group at large. Countries like the USA tend to score high on this dimension as they emphasize individuality whereas countries with communist roots (e.g., China) emphasize collectivism.

Third, the masculinity/femininity (MAS) dimension views society along a continuum from masculine to feminine. If a society is masculine it prioritizes competition, role differentiation, and work. A feminine focused society values cooperation, equal roles, and balancing family and work.

Fourth, uncertainty avoidance (UAI) deals with whether or not a society values trying to control the future or just letting the future happen. In a low UAI society uncertainty is accepted, chaos is okay, rules are disliked, and change is seen with little trepidation. In a strong UAI society, uncertainty is a threat, there is a need for rules, and structure is valued. Long/short term orientation (LTO) deals with how a society uses what happened in its past to deal with the hurdles that exist in its present and future.

Fifth, a short-term orientation values the present, believes the most important events are happening now, and that they should be proud of one's country and its history. Countries with a long term orientation view future events as most important, believe that one should learn from other countries, and that people adapt to situations over time.

Sixth, an indulgence/restraint (IVR) focuses on whether countries and societies permit their citizens to gratify their basic human needs for things like control and fun. Consequently such countries tend to have many happy people. Countries that emphasis restraint tend to suppress need satisfaction and have more restrictive social norms against meeting needs. Although the six dimensions are mostly easily defined based on the extreme ends of the continuum it is important to note the dimensions and scores on the dimensions are not dichotomous: countries can score anywhere between zero and one hundred.

In regard to emotion, because the Paralympics is the pinnacle of an athlete's career and perceptions of success or failure are so important to athletes, the Paralympics has the potential to elicit a wide range of emotions that may be remembered for a lifetime and have implications for future well-being. Emotional experiences observed in settings such as the Paralympics may also be particularly nuanced. Athletes can experience "disappointing wins" (e.g., winning a bronze medal while being favored to win gold) or "relieving wins" (e.g., third and a bronze medal relative to fourth and no medal; Martin, 2021). Narrow victories may also elicit emotions (e.g., surprise) not present in wins that come more easily while close losses may elicit strong emotions (i.e., anger) relative to losses not considered close (Martin, 2021). In brief, the interna-

tional composition of the Paralympics and its' potential to generate intense emotions makes it an ideal setting to examine cultural identity and emotional diversity.

To briefly summarize, it was expected that some of the seven basic emotions would be associated with some of the six cultural dimensions that the Paralympic athletes' country of origin varied on. We next offer a few hypotheses that are based on theory, logic, and empirical work. We hypothesize that; in general, the individual/collectivist dimension would be related to both negative (i.e., fear, anger, sadness, and disgust) and positive emotion (i.e., happiness). Individualist countries (e.g., USA) prioritize individual uniqueness over the group. Hence, emotional expressions are seen as examples of individual success or failure and the expression of positive or negative emotions are not seen as casting a negative light on the group (i.e., the team). In contrast, expressions of emotion in collectivistic cultures, such as anger, are viewed as poor reflections on the group (i.e., the team) and tend to be suppressed relative to individualistic cultures. Martin et al. (2019) found that Paralympians from the USA, Brazil and Great Britain (individualistic countries) were happier than athletes from China and the Ukraine (i.e., collective countries), after controlling for the medal they won.

We also anticipated that cultures with a more short time orientation might have athletes more "in the present" and therefore experience both positive and negative emotions more frequently and intensely compared to athletes from countries with a long term orientation. Finally, we also anticipated that athletes from countries that are more indulgent and less restrained might experience positive and negative emotions more frequently and intensely than restrained and less indulgent cultures because they do not suppress needs and desires and the emotions (e.g., happiness) associated with meeting those desires (e.g., a gold medal).

Examinations of other potential relationships beyond the above hypothesized ones are exploratory in nature. For example, in thinking about how a cultural dimension (e.g., uncertainty avoidance) might be related to an emotion (e.g., anger) we were unable to develop a logical or theory based argument to support a hypothesis. Given the current study is the first one of its nature we believe the partial exploratory approach of our study is appropriate. Another way of viewing our study is through the lens of an abductive theory of the scientific method (ATOM). The ATOM, in part, uses exploratory data analyses as a method to determine if data patterns exist which can then lead to plausible explanations for the phenomena and in turn support continued research that might lead to theory development, refinement and appraisal (Haig, 2005, 2008). A critical research design element warrants emphasis. We employed a rigorous test of our hypotheses and the potential relationships among culture and emotion by controlling for 3 relevant individual based performance related (i.e., medal won, place and time expectations) emotional antecedents. This decision allowed us to determine if the six cultural dimensions would account for variance beyond performance (e.g., medal won) influenced emotional experiences.

Finally, we should also point out that our measure of emotion was done at an individual level with Paralympians. In contrast our cultural dimension measure was done at the group (i.e., country) level using historical data based on large groups of people who were not Paralympians. Hence, this mismatch also provides a strenuous test of our hypotheses as associations due to common method variance are eliminated. However, it also means that expected relationships may be attenuated.

## METHODS

### Participants

Participants consisted of Paralympic ($N = 83$) swimmers from the 2016 Games who won gold, silver, and bronze medals[1] and had valid (i.e., Facereader software could detect a face long enough to gather data) emotion data output from Facereader. Additionally, athletes had to be from countries that had cultural dimension scores, and had place and time world rankings from 2015 in the same event that they swam in the 2016 Paralympics. We sought to examine countries that had somewhat large and similar numbers of athletes and covered the range of scores from Hofstede's dimensions (see Table 1). For instance, countries who had single athletes were eliminated because within group variability is impossible to determine. With somewhat similar sample sizes we are also more likely to meet the equal variance assumption of many statistical tests. Finally, a power analysis with the ability to detect a small to moderate correlation of 0.30, alpha at 0.05 and power at 0.8 indicated a sample of 85 was needed. The final sample was as follows: China, n = 21; USA, n = 20; Ukraine, n = 17; Great Britain, n = 14; Brazil, n =11.

Based on the Paralympic data base, athletes were classified as follows: visual impairment, n = 17; neurological or musculoskeletal impairments, n = 13; upper limb deficiency, n = 15; cerebral palsy, n = 15; lower limb deficiency, n = 6; upper and lower limb deficiency, n = 10; spinal cord injury, n = 4; short stature, n = 3. Age ($M$ age = 24.39; $SD$ = 5.09; range = 14–40 years) and gender (Males = 43; Females = 40).

**Table 1** Hofstede's Cultural Dimension Scores by Country

| | Power Distance | Individualism | Masculinity | Uncertainty Avoidance | Long Term Orientation | Indulgence |
|---|---|---|---|---|---|---|
| China | 80 | 20 | 66 | 30 | 87 | 24 |
| Ukraine | 92 | 25 | 27 | 95 | 86 | 14 |
| United States | 40 | 91 | 62 | 46 | 26 | 68 |
| United Kingdom | 35 | 89 | 66 | 35 | 51 | 69 |
| Brazil | 69 | 38 | 49 | 76 | 44 | 59 |

[1] Given the exploratory nature of the research in this area it was determined that making a Type II error would be more serious than making a Type I error. Therefore a $p$ value of 0.10 was selected for determining statistical significance. In the current study we emphasize effect size (i.e., relationships among cultural dimensions and emotions) because effect sizes judged as meaningful should not be disregarded if they do not meet the traditional value of $p > 0.05$ (Cohen, 1994; Franks & Huck, 1986; Sauley & Bedeian, 1989). Many other researchers, going back over 60 years have supported our perspective (e.g., Fritz et al., 2012; Kelly & Preacher, 2012; Sullivan & Feinn, 2012; Vacha-Haase & Thompson, 2004; Yates, 1951).

## Measures

*Emotions*: Facereader software, developed by Noldus Information Technology, was used to examine swimmers' facial expressions. Facial expressions were obtained from recorded broadcast footage that was edited to short video clips (10–15 seconds) of all 46 individual 2016 Paralympic swimming races. The video clips showed the three medal winners completing their races with their heads above the water and close-ups of their faces as they experienced a range of emotions. Most images lasted three to four seconds but given the live nature of the event full front facial views were not always captured for the full three to four seconds. The software detects the presence of faces such as those in video clips and then analyzes over 500 key points of the face. Key points are then used to determine emotions that are classified into seven emotional categories (happy, sad, angry, surprised, fear, disgusted and neutral) considered to be universal based on the extensive work of Ekman (Bartlett et al., 1999; Ekman, 1970, 1992, 1993, 1997). All scores range from zero to one. A score of one means that emotion is fully present while a score of zero indicates it is absent. Furthermore, a higher score reflects a more intense emotion. While the six basic emotions (e.g., sad) are self-explanatory the emotion of neutral reflects a lack of any emotion or no emotions. The Facereader has been successfully used in sport research (Hetland et al., 2018; Martin, 2021) and hundreds of non-sport research publications (Stöckli et al., 2018) and has produced scores deemed valid and reliable.

*Cultural Dimensions*: Each athlete, based on their home country, was awarded a score (see Table 1) for the six cultural dimensions based on Hofstede's model. Scores for each country that athletes were representing in the Paralympics were obtained from Hofstede et al. (2010) and could range from 0 to 100. For example, Japan scored 95 on the masculinity/femininity scale whereas Sweden scored five. Four cultural dimensions (i.e., power distance, uncertainty avoidance, individualism/collectivism, and masculinity/femininity) were developed based on data from International Business Machines (IBM) and its employees in over 60 countries in the 1980's. As Hofstede extended his line of research he added long term/short term orientation and indulgence/restraint as well as the number of countries scored (n = 76; Hofstede et al., 2010). Various replications and similar work by various research teams have substantiated his work (Hofstede et al., 2010) although he has been criticized for viewing cultural as too static (Beugelsdijk & Welzel, 2018).

*Medal Won*: Each athlete's race finish and medal won was determined from the video clips and confirmed on the Rio Paralympics results page (https://www.paralympic.org/sdms/hira/web/competition/rio-2016/swimming). We then scored gold, silver, and bronze medals as three, two and one respectively.

*Race Time and Place Expectation Proxies*: Each athlete' world ranking and best time from (2015) was based on their world ranking (https://www.paralympic.org/swimming/rankings).

A comparison of each athlete's 2015 ranking with their Paralympic race place was used to determine if athletes' placed higher, the same or lower. The same logic was used for their time expectation and to determine if they swam faster, the same, or slower. Swimmers who placed higher and swam faster were scored a three and those that placed lower or swam slower were awarded a one. Finally, if swimmers placed or had a time identical to their 2015 best performances they were scored a two.

## RESULTS

### Preliminary results

Data were screened for outliers, normality and missing data. Missing data varied according to the variables used in each analyses and was not replaced given the nature of the missing data. For example, the Facereader software was unable to assess emotion for all athletes because the software could not pick up the front of the face for long enough or the face was partially emerged in water. Other athletes with missing data came from countries without a cultural dimension score or did not have a 2015 world ranking in the same race they competed in during the Paralympics. Descriptive data indicates the following mean values for the emotions in descending order: neutral ($M = 0.42$; SD = 0.15), happiness ($M = 0.22$; SD = 0.20, surprise ($M = 0.16$; SD = 0.14), sadness ($M = 0.14$; SD = 0.14), scared ($M = 0.10$; SD = 0.11), angry ($M = 0.05$; SD = 0.04), and disgusted ($M = 0.03$; SD = 0.03). Values for cultural dimensions by country only convey valuable information in relation to each other (see Table 1). Interested readers can access how countries are scored on the six dimensions here: (https://www.hofstede-insights.com/product/compare-countries/).

### Cultural dimensions and emotions

We examined correlations among the six cultural dimensions and the seven basic emotions and found some support for our hypotheses. As noted earlier, we first controlled for emotions linked to performance because the Paralympians in our study from various countries all won different medals (i.e., gold, silver, bronze) which elicited varied emotions. We controlled for three forms of objective and subjective success that are important to athletes: medal won and whether swimmers swam faster and placed higher than their 2015 world rankings for time and place. Additionally, this analytical decision allowed us to determine if cultural identity (i.e., dimensions) accounted for variance in emotional expression beyond that associated with performance. Such a strategy is a much stronger analytical approach compared to not controlling for such obvious performance (e.g., medal won) based influences on emotions linked to success or failure.

Neutral (3 times) and happiness (2 times) were the emotions that were most often linked to the cultural dimensions and long/short term orientation (3 times) and indulgence (2 times) were the most common cultural dimensions associated with emotion. The emotions of surprise, sadness, fear, anger, and disgust were unrelated to any cultural dimension and the cultural dimensions of uncertainty avoidance, individualism/collectivism and masculinity/femininity were unrelated to any emotions.

Happiness was positively linked to indulgence/restraint ($r = 0.210$, $p < 0.06$) and negatively associated with long/short term orientation ($r = -0.313$, $p < 0.004$)[1]. The emotion of neutral was positively associated with power distance ($r = 0.239$, $p < 0.032$) and long term/short term orientation ($r = 0.290$, $p < 0.009$) while being negatively linked to indulgence ($r = -0.276$, $p < 0.013$). All effect sizes (i.e., variance accounted for; 5 to 9%) were small. All other correlations were not significant and ranged from $r = 0.01$ to $r = 0.190$.

## DISCUSSION

The major purpose of this study was to examine if cultural identity was related to the emotional expressions Paralympians displayed as a result of winning a medal. We first comment on the five significant relationships that we found. We should note that our explanations are tentative and involve extrapolating how athletes are socialized via their countries cultural dimensions to an individual expression of emotion in one moment in time. Hence we offer these explanations with caution and in the hope our current work might stimulate similar research in disability sport. We should also note that mean levels (on a 0 to 1 scale) of positive emotions, were not particularly high (e.g., 0.22 for happiness) but relative to negative emotions they were certainly higher (e.g., 0.05 for anger). Standard deviations clearly indicate variation in emotional expression. It is also important to keep in mind that our analyses only reveals that Paralympians from countries with certain cultural dimensions were more (or less) likely to experience particular emotions or in the case of a neutral emotion; no emotion.

First, happiness was positively linked to indulgence and negatively linked to restraint. It seems plausible that Paralympians growing up in indulgent cultures that accept and encourage meeting basic needs linked to living a happy life and having fun would be more likely to produce Paralympians who will express more happiness compared to Paralympians who are socialized in more restrained cultures that do not encourage enjoyment and indulgence. We should also note here that we did not find a happiness and individualistic/collectivist link which is contrary to Martin et al. (2019) who found that athletes from individualistic countries like Great Britain were happier than athletes from collectivistic countries like the Ukraine. Different measures of happiness and varied samples[2] may have produced the divergent results between the current study and Martin et al. (2019).

Second, happiness was positively associated with a short term orientation and negatively associated with long term orientation. Hofstede's dimensional concept of culture long-term orientation focuses on perseverance and a tendency to work hard and emphasizes that the most important life events will happen in the future (Hofstede, 2011). Cultures in which long-term orientation dominates tend to easily accept belated gratification of individual achievement (Beugelsdijk & Welzel, 2018).

In contrast, according to Hofstede (2011) cultures in which short-term orientation dominates people tend to have a focus on the "here and now" (Beugelsdijk & Welzel, 2018). Given this definition it is not surprising that long-term orientation was negatively associated with emotional experiences of happiness. Our results are also in agreement with a study of Beugelsijk & Welzel (2018) who found moderately high negative correlation of happiness (–0.35) with long-term orientation.

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[2] The video tapes examined in the current study are a sub-sample from a data base used in the Martin et al. (2019) and Martin (2021) research study, but are not identical. Additionally, the tapes were used to generate data (the 7 emotions) that was not presented in the Martin et al. (2019) study. Emotion data but not cultural data was presented in a previous publication (Martin, 2021).

According to Hofstede et al. (2010), societies with long-term focus tend to be more restrained and societies characterized by a short-term orientation incline to be indulgent. Indulgence represent a tendency to enable relatively free enjoyment of human desires, expressing emotions and having fun. Restraint represents an inclination to suppress emotional impulses, regulate and curb the human desires and needs by strict social norms. These definitions also support the current findings where happiness was negatively associated with long-term orientation (Beugelsdijk & Welzel, 2018).

Third, the emotion of neutral was negatively associated with indulgence and positively linked to restraint. It is important to recall that a neutral emotion is equivalent to a lack of emotion. It seems Paralympian with more restraint have difficulty showing their true emotions and they may be unable to express what they are feeling. As mentioned earlier, emotions were suppressed in these cultures. Therefore, athletes likely found it more acceptable to stay neutral at the end of their races rather than express intense emotions. On the other hand, Paralympians coming from more indulgent cultures were less likely to show neutral emotions. These findings are consistent with our first finding as athletes from indulgent countries showed their intense feelings of happiness.

Fourth, the emotion of neutral was also positively associated with a long-term orientation and negatively linked to a short term orientation. It can be argued that Paralympians growing up in long term orientated countries believe that future events are the most important in life and value the person's ability to adapt to circumstances and persist were more likely to experience a neutral emotion. On the other hand, athletes who are socialized in short term orientated cultures value the present time and are encouraged to be proud of their own cultural identity and traditions were, consequently, less likely to express a neutral emotion.

Fifth, a neutral emotion was also positively associated with power distance. Athletes from countries that accept an inequality of power distribution, compared to athletes who favor more equality, were more likely to express a neutral emotion or display no emotion. Paralympians from countries that do not endorse a power differential among its citizens were less likely to express a neutral emotion. It is unclear how differential socialization processes regarding power differentials may influence a lack (i.e., a neutral emotion) of expressed emotion centered on winning a Paralympic medal.

Effect size is a measure of the meaningfulness found in relationships and contrary to significance testing is not vulnerable to sample size (Martin et al., 2019). In the current study we found mostly small effect sizes as the variance accounted for ranged from 5% to 9%. Ferguson (2009) and Vacha-Haase and Thompson (2004, p. 480) suggest that researchers report effect sizes and make comparisons to related research to inform readers. Our study is the first to examine Facereader generated emotion data and culture in Paralympic athletes making comparisons difficult.

However, effect sizes are also best understood within the context of an individual research effort and the context, research question, method and sample (Fritz et al., 2012). We found five relationships among the cultural dimensions and emotions and four were theoretically defensible. Furthermore we found these relationships while controlling for emotions directly linked to performance (the major goal of the Paralympics) and with a mismatch between our measurement (i.e., group versus individual) of emotion and cultural identity. Both of these factors had the potential to

eliminate or attenuate anticipated relationships. Given the above considerations we believe our findings, at a minimum, suggests our research questions had merit and warrant continued work in this promising area.

Linking culture and emotion in sport is rare. However, our findings indicate that athletes, coaches and sport psychologists should pay attention to culture and how athletes' countries cultural dimensions may potentially influence emotional display rules which in turn influence emotional expressions in high level elite competitions like the Paralympics.

### Limitations and future research

A few limitations should be noted. First the correlational nature of our study precludes establishing causality. However, logic would suggest that any causal implications would flow from the socialization processes athletes' experience in their home countries to their emotional reactions at the Paralympics given that the any cause must precede the effect (Hill, 1965). Additionally, our measurement mismatch may have underestimated the number and strength of relationships among the cultural dimensions and emotions.

Future researchers, if they have access to Paralympic teams, should consider directly measuring the cultural dimensions endorsed by the Paralympians. Some of the criticism of Hofstede's dimensions is that they were developed years ago and are unresponsive to how cultures change and the cultural values present in 2022. Assessing cultural values directly from Paralympians, for example, would insure measurement at the individual level and that scores reflect participant's views of contemporary culture ( Jackson et al., 2006).

In summary, the current study advances the knowledge base in disability sport psychology and specifically cultural identity and emotion in two ways. First, in regard to emotion, we found that happiness and neutral emotion (i.e., a lack of emotion) were linked to the cultural dimensions and other emotions such as surprise were unrelated to culture. Second in regard to cultural identity we found that both a long/short term orientation and indulgence/restraint were the most common cultural dimensions associated with emotion. Effect sizes associated with all findings were small but we do not consider them trivial, particularly considering we controlled for a major influence on emotions with three forms of commonly used performance indices that athletes use to gauge if they performed well or poorly. These findings expand the knowledge base in Paralympic sport by examining a topic that has previously received little attention in the sport psychology literature. Our findings also inform theory based work on emotion and culture and help Paralympic coaches understand the potential influence of culture on emotional expressions linked to performance. Such emotional expressions, indicative of emotional satisfaction/dissatisfaction have the potential to influence future behavior (e.g., drop-out, perseverance).

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