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**Developing public health initiatives through understanding
motivations of the audience at mass gathering events**

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SPECIAL REPORT

Developing Public Health Initiatives through Understanding Motivations of the Audience at Mass-Gathering Events

Keywords: motivation; audience; public health; health; harm minimisation

Abstract

This paper identifies what we know about audience motivations at three different mass gathering events; outdoor music festivals, religious events and sporting events. In light of these motivations the paper will discuss how these can be harnessed by event organiser and emergency medical services. Lastly motivations tell us what kinds of interventions we can use to use an understanding of audience characteristics and the opportunity to develop tailor made programs to maximize safety and make long-lasting public health interventions to a particular “cohort” or event population. A lot of these will depend on what the risks / hazards are with the particular populations in order to “target” with public health interventions.

Audience motivations tell the event organiser and emergency medical services about the types of behaviours they should expect from the audience and how this may affect their health whilst at the event. Through these understandings health promotion and event safety messages can be developed for a particular type of mass gathering event based on the likely composition of the audience in attendance. Health promotion and providing public information should be at the core of any mass gathering event to minimise public health risk, and to provide opportunities for the promotion of healthy behaviours in the local population.

23 Audience motivations are a key element to identify and agree on what public health information
24 is needed for the event audience. A more developed understanding of audience behaviour provides
25 critical information for event planners, event risk managers and emergency medical services
26 personnel to better predict and plan to minimise risk and reduce patient presentations at events.
27 Mass gathering event organisers and designers intend their events to be positive experiences and
28 to have meaning for those who attend. Therefore continual vigilance to improve public health
29 effectiveness and efficiency can become best practice at events. Through understanding the
30 motivations of the audience, event planners and designers, event risk managers and emergency
31 medical personnel may be better able to understand the motivation of the audience and how this
32 might impact on audience behaviour at the event.

34 **Introduction**

35 Mass gathering event planners and designers intend for their events to be positive experiences
36 and to have meaning for those who attend. Mass gathering events are important as the shared
37 experience of attendance can lead to ‘communitas’. Getz¹ defines communitas as the shared
38 experience of the audience, including a sense of belonging and kinship. Motivations tell the event
39 organiser about the types of behaviours they should expect from the audience, which may lead
40 to patient presentations. Through these understandings health promotion and event safety
41 messages can be developed for a particular type of event based on the likely composition of the
42 audience in attendance.

43 There are three goals to this paper, firstly to discuss motivations of the audience attending
44 outdoor music festivals, sporting events and religious events. Secondly to discuss how these
45 motivations can be harnessed by event organizers and onsite medical teams and thirdly, what

46 types of interventions can we use to promote harm reduction and maximize safety whilst
47 tailoring these to each specific crowd. The long term aim to make long-lasting public health
48 interventions in a particular “cohort” or discrete event type population.

50 **Report**

51 *Background*

52 Health promotion and providing public health information should be at the core of any event to
53 minimise public health risk, and to provide opportunities for the promotion of healthy behaviours
54 in the local population². A key part of this process is to identify and agree on what public health
55 information is needed for the mass gathering audience. Secondly, how this information should be
56 communicated, and any other health messages or strategies that need to take place. A more
57 developed understanding of audience behaviour may provide critical information for mass
58 gathering event planners, event risk managers and emergency medical service personnel to better
59 predict and plan to minimise risk of injury or illness. In turn, this may reduce patient presentations
60 at events and reduce health service usage. For the event designer, understanding audience
61 motivation and subsequent behaviour enables the design of the event to be modified and to adapt
62 settings and programs as a response to observable audience behaviour in real time³.

63 According to Hutton, Brown and Verdonk⁴ it is important to remember that audiences
64 do not arrive at an event as a ‘blank slate’, but bring with them a range of motivations. These
65 motivations include four main elements 1) the demographic and sociographic of the individual,
66 2) the expectations of the audience based on how the event is marketed 3) the audience
67 members’ previous experience at events, and 4) the beliefs of the family or friends that
68 accompany the audience member to the event. Motivations in the mass gathering context can

69 also include pre-event drug and alcohol consumption. These motivations do not solely dictate
70 or indicate audience behaviour, but are one of a wide range of factors that influence, and that
71 can perhaps modify, audience behaviour at an event⁴.

72 *Escaping Everyday Life*

74 Too often there is an expectation that audiences will comply with set rules and not act outside
75 societal boundaries at events. This belief is flawed, as with freedom of choice comes freedom of
76 action, and staying healthy or being safe is not always at the forefront of people's minds at mass
77 gathering events. It is well documented that music festival goers attend outdoor music festivals
78 to escape everyday life and part of this escapism may include the use of alcohol and other drugs
79 at these events^{5,6}. Outdoor music festivals are often reported to have a high rate of incidents and
80 presentations to onsite care due to the presence of alcohol and other drugs^{7,8}. Rule breaking,
81 which includes high levels of intoxication is not new in the mass gathering space. Researchers
82 who reported on both the 2004 Oxegen festival in Ireland and the 1999 Sweetwaters festival in
83 New Zealand both reported high levels of intoxication^{9,10} and a significant increase in
84 presentations at the emergency departments of local hospitals⁹. Social and physical
85 environments can heavily influence the safety of people at outdoor music festivals. Social factors
86 include individual motivations, behaviours, knowledge of people at an event¹¹. Whereas physical
87 environments include mosh pits and activities such as crowd surfing; where audience members
88 purposively crush together in a tight group in front of the stage^{12,13,10}

89 . Escaping everyday life may not only be isolated to outdoor music festival and this concept
90 could be applied to other mass gathering events. Knowing risk taking activities are likely to take

91 place can assist in event design, planning of health care services and associated health promotion
92 activities at these events to enhance spectator experience and services (Please see Table 1).

94 *An Act of Faith*

95 Religious events especially, can see over-zealous behaviour. For example religious events like
96 the Hajj may be a pilgrimage that participants make only once in their life. Rituals that
97 demonstrate a display of faith often dominate religious events¹⁴. Religious followers that attend
98 these events are focused on the ritual itself, with little consideration of their health needs¹⁵. The
99 commitment of the audience member to these religious mass gatherings should not be
100 underestimated. These persons may display behaviour that might range from the passively
101 devout to the aggressively fanatical and everything in between¹⁶. Understanding the cultural
102 elements of what already exists within the event and what is brought to the event by the audience
103 are important for predicting likely behaviours and assessing risk.

104 During many religious festivals in India, fireworks are used to celebrate the occasion; the
105 Chaharshanbe is one such event. Fire is integral to the celebration, as it is used to scare away evil
106 spirits and is an essential part of the event^{17, 18}. Therefore the risk of burns is high, especially for
107 young males who seek blessings for their families. Burn injuries are common and accepted by
108 the audience as part of the event and considered good luck. Most common injuries occur to the
109 hands and eyes^{14,17,18}. In the excitement and chaos of this type of event it is not always possible
110 to prevent people getting burnt, yet it is possible to plan to treat this type of injury if it is known
111 to be common for this event. For example, having first aid equipment specifically for burns (for
112 example appropriate salves and ointments) is important as well as ensuring running water is
113 available.

114 Perhaps the most famous religious is the Hajj, followed by World Youth Day and the
115 Catholic Jubilee where devotees travel great distances^{19,20,15}. An important aspect of these events
116 is the requirement of the audience to undertake a pilgrimage over long distances. In addition the
117 final ritual/rituals are performed no matter what age or general health problems participants may
118 have prior to commencing. Pilgrimage is quite taxing on the body as people may be required to
119 walk long distances. At the Hajj participants are required to wear open sandals, therefore foot
120 injuries are common, as are burns to the soles of the feet, and minor cuts and bruises from
121 falls^{20,15,22}.

122 Physical and heat exhaustion, sunburn, and sunstroke are all conditions common at these
123 events^{20,15,22}. However, these injuries are minor compared to those that can occur with a large
124 influx of people; these being the increased risk of communicable diseases²¹. When pilgrims of
125 religious mass gatherings arrive at an event, they may have crossed borders, caught infectious
126 diseases and now be carriers of illness^{20,15,22}. For example, pilgrims at the last
127 Catholic Jubilee event suffered from a gastro-intestinal disease due to Giardia contamination¹⁹.

128 At World Youth Day, the risk of influenza and its transmission are high. Within the
129 prevailing culture of the event of sun, prayer and friendship, health is not foremost in the minds
130 of young people as they are focused on 'in the moment' aspects of being at the event²⁰. Even
131 with evidence of influenza at these events, hospital admissions are often low and this may be
132 attributable to the young audience feeling healthy enough to overcome the infection and not
133 attend hospital for treatment. Additionally low admissions may be a result of the audience being
134 so engaged in the event and the sense of community there that they are loathe to leave the event
135 site until such time as their illness disables their ability to continue to enjoy or participate in the
136 event²⁰. In these mass events exposure to disease can be tempered through hand washing and

137 universal precautions^{22,21,15}. Further safety measures including vaccination, hydration, and
138 knowledge of the conditions awaiting the pilgrim are vital for the event manager so that planned
139 on-site care can be set up around these issues.

140 Other religious festivals such as the Ram Janki in India report many deaths from human
141 stampedes²³. Stampedes are often due to zealous followers trying to get through narrow gates to
142 take part in the celebration, and lack of egress and access can led to many deaths. Despite these
143 risks to health Yeolekar and Bavdekar²⁴ claim that religious festivals are important in helping to
144 further develop community bonds, keep indigenous culture alive and vibrant, and bring cheer and
145 happiness to families and societies²⁴. As these rituals and attendance at these events are part of
146 their faith, audiences risk their health by performing these rituals regardless of their age, gender,
147 and general health, leading to further complications. Additionally pilgrims from lower
148 socioeconomic groups may have limited access to medical care and can suffer long term from
149 injuries sustained at events. For example, most of the people who travel to Mecca are from
150 resource poor countries that do not provide vaccines against infectious diseases, increasing the
151 risk health of others around them due to crowded circumstances¹⁶.

153 *Being Part of a Tribe*

154 Like religious festivals, sporting events are important as they reinforce community cohesion and
155 the enhancement of an individual's sense of well-being. Sporting events also enhance national
156 pride and a sense of belonging through supporting a team or club^{25,26}. Many of these events
157 become a space where people seek to enjoy large amounts of food and alcohol, leading to
158 overconsumption²⁷. Understanding that this type of activity is part of the attendance at many
159 sporting events is necessary for appropriate event risk management and the mitigation of the

160 immediate and dire health effects this behaviour can lead to. Even though the event is only a
161 trigger many spectators suffer heart attacks due to smoking, fatty foods, overeating, excess salt,
162 alcohol, illicit drugs and physical exertion^{28,27}.

163 Clearly, audience members bring the state of their health with them to the event, but fans
164 continue to consume fizzy drinks, burgers and hot dogs which may exacerbate any underlying
165 health issues^{27,7}. This behaviour coupled with the stressors related to their physical and emotional
166 engagement with the sporting contest as a spectator (for example, yelling cheering, shouting,
167 jumping up and down, getting angry and upset, etc.) is a potent combination that involves a range
168 of risks for the audience member²⁴. In this type of scenario on-site care staff need to prepare for
169 conditions such as heart attacks, indigestion and the effects of alcohol.

170 'Mega' events like the Football World Cup have a culture all of their own that attracts
171 large scale attendance and interest²⁹. This interest, when translated into very large numbers of
172 people travelling from all over the world, brings with it an increased risk of communicable
173 disease infection. As well as the travel risks, there is also evidence of unhealthy and antisocial
174 behaviour at these events, for example, binge drinking, unsafe sex and violence³⁰. People who
175 travel to these types of mega events, such as the football World Cup, are often very passionate
176 sports fans. The level of excitement generated gives an indication of the emotional and physical
177 investment people make when attending such an event. For example Kelly, Windsor, Delaney
178 and Maguire³¹ reported that at the 2002 World Cup in South Korea/Japan reported high rates for
179 depression and anxiety amongst spectators. They also reported high psychiatric referral rates
180 related to alcohol misuse. This type of finding tells event planners that spectators at this event
181 may need access to counselling services. Event volunteers can provide such information, and

182 websites and contact numbers can be displayed on screens during the event so that spectators can
183 access these services at their discretion.

184 As well the effects of depression, passionate sports fans can undergo ‘spectator stress’
185 that can trigger cardiovascular events. In these environments defibrillators are a must. However
186 if the event planner considers that people are going to misuse alcohol, get ‘over excited’, and ride
187 the emotional highs of wins and losses, then can build in infrastructure at the event to support
188 them. Strategies such as crowd care were implemented at the Polish World Cup to good effect. In
189 addition to chill out zones, with no alcohol allowed, qualified counsellors and warm beverages
190 provide a supportive environment for the audience. Roshchin and colleagues³², reported that
191 strategies such as these were effective in supporting spectators. In addition these venues can
192 provide pamphlets and brochures with QR codes with links to support services in that town or
193 region that audience members can seek on their own. These types of strategies can lead to the
194 overall public health of the event.

195 Other health issues commonly associated with the World Cup and the Olympic Games is
196 a segment of the audience attracted to the event who utilise the services of sex workers³⁰. The
197 cultural predisposition of an audience that drinks (often to excess) and that travels from outside
198 the region where the event is hosted creates a public health risk related to Haemophilus
199 influenza A and HIV transmission (audience member to sex worker and vice versa). Here
200 condom use and hand washing are important, along with screening of sex workers to ensure they
201 are clean prior to major events. Recently in Brazil the culture nuances of underage prostitution
202 came to light with the expected influx of thousands of people during the World Cup³³. Even
203 though Brazil does have a large underage sex trade it is not legal, so as well as the health care

204 aspects of unprotected sex it was also important to inform people coming into the community
205 that engaging in some activities can be against the law.

206 Alcohol consumption is closely associated with many sporting events and American
207 Football is no exception³⁴. Merlo has found that a ‘no drinking’ policy or dry zone can lead to the
208 practice of ‘tailgating’ (where you drink from the trunk/boot of your car) prior to the event³⁴.
209 Studies on Celtic football in the United Kingdom have also found that the ingestion of excessive
210 alcohol leads to the majority of presentations at medical facilities at those events.

211

212 **Discussion**

213 Event organisers intend their events to be positive experiences and to have meaning for those
214 who attend. Therefore continual vigilance to improve public health effectiveness and efficiency
215 must become best practice at mass gathering events. Primary interventions such as
216 immunisations, running water, soap and shade are important aspects of pre-event planning.
217 However public health planners need to go one step further and acknowledge the motivations of
218 attendees at events to craft health messages and interventions that will reduce the number of
219 injuries and illnesses obtained at mass gathering events. Surveillance at large mass gathering
220 events have focused on communicable diseases with little understand of what motivates the
221 audience to attend the event. Systems must be sensitive enough to detect potential behaviours of
222 the audience, for example the use of fireworks or a clash between two tribes during a sporting
223 match. Relying on the audience or event goers to act safely and responsibly at all times is short
224 sighted when event goers can be supported to stay safe and healthy at an event.

225 Hutton’s work at schoolies festivals, where young people celebrate the completion of
226 high school, shows that when young people go to an event with the intent to drink with their

227 friends; that is exactly what they do²⁸. This type of insight into motivations has been used to put
228 in place strategies to support audience members attending these events. For example free water;
229 chill out areas that are alcohol free, and peer-led support can help to reduce the rate of
230 intoxication and increase the safety of participants at these events^{35,36}.

231 In all three of these mass gathering modalities we see that in all events the ability to wash
232 hands and have running water is a must. As with outdoor events, shade and free sunscreen is also
233 important. What audience motivations do, is to bridge the link between medical practices such as
234 on site care and public health interventions such as crowd carers, free water, and chill out zones.
235 Once particular harm minimisation strategies are put in place, these can be standardised to be
236 included in the basic infrastructure of each event

237

238 **Conclusion**

239 The aim of this opinion piece is to begin a conversation acknowledging that audiences come to
240 mass gathering events with an expectation of how they will behave at an event (motivations).
241 The paper has argued that by understanding the motivations, and potential behaviours of the
242 audience at an event, event planning can be enhanced to improve the wellbeing of the audience.
243 Too often there is an expectation that audiences will comply with set rules and not act outside
244 societal boundaries at events. This belief can be a mistaken one, as with freedom of choice
245 comes freedom of action, and staying healthy or being safe is not always at the forefront of
246 people's minds. Through understanding the motivations of the audience, event organisers and
247 onsite medical teams, can plan and prepare interventions to promote harm reduction and
248 maximize safety at each event. The ultimate aim of developing this understanding is to better

249 inform the health promotion and public health messages that can be developed for a particular
250 type of event, based on the likely composition of the audience in attendance.

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351 **Table 1.** Motivations, Health Promotion and Strategies – Outdoor Music Festivals

Event	Motivations	Health Problem	Planning/Health Promotion Strategies
Outdoor music festivals	Drinking with peers and socialising with friends To see favourite band Sunburn and heat exhaustion	Trauma from drinking, Violence sexual and physical from drinking Dehydration Foot injuries from Moshing/walking around	Hand washing with soap Running water in bathrooms Hand Washing reminders Free Water Shade Chill out rooms/alcohol free zones Health messages; "Look after your mates' - "Pick people up in the mosh pit " Crowd Care

Electronic dance festivals	Socialising with peers and socialising with friends To see favourite band Dance with friends	Taking drugs prior/during the event Dancing for long periods of time "Shredding' prior to the event Dehydration Foot injuries from Moshing/walking around	Hand washing with soap Running water in bathrooms Hand Washing reminders Free Water Pill Testing Chill out rooms Health Messages; "Look after your mates " "Stay hydrated" "Wear shoes that you can dance in" Crowd Care
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Table 2. Motivations, Health Promotion and Strategies – Religious Festivals

Event	Motivations	Health Problem	Planning/Health Promotion Strategies
Hajj	Deep religiosity Pilgrimage of faith Commitment to Mecca	Infectious diseases, Influenza A (H1N1), Tuberculosis Meningococcal Hepatitis Sunburn Dehydration Crushing Risk of Stampedes	Immunizations Hand washing with soap and water Running water Hand Washing reminders Free Water Shade Sun cream Controlled entry/exit if culturally appropriate

World Youth Day	Deep religiosity Pilgrimage of faith	Giardia Minor Injuries to feet Sprains/strains Sunburn Dehydration	Hand washing with soap Running water Hand Washing reminders Free Water Shade Sun cream Appropriate Footwear Hydration Controlled entry/exit if culturally appropriate
Chaharshanbe Soori	Deep religiosity Pilgrimage of faith Blessings	Burns to hands and feet	Running water Protective eye wear Water available First aid for burns Controlled entry/exit if culturally appropriate
Ram Janki	Deep religiosity Pilgrimage of	Stampedes Crushing	Wider gates Controlled entry/exit if culturally appropriate

402 faith Blessings

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405 **Table 3.** Motivations, Health Promotion and Strategies - Sporting

Event	Motivations	Health Problem	Planning/Health Promotion Strategies
World Cup Soccer	Sporting fans Drinking with peers Sex workers	Heart attacks, Trauma as a result drinking, Violence sexual and physical from drinking Infectious diseases, HIV, Hepatitis	Hand washing with soap Running water in Bathrooms Hand Washing reminders Condoms Pastoral Care Chill out zones – alcohol free
Olympic Games	Sporting fans Drinking with peers Sex workers	Heart attacks, Trauma from drinking, Violence sexual and physical from drinking Infectious diseases, HIV, Hepatitis	Hand washing with soap Running water in Bathrooms Hand Washing reminders Distribution of free Condoms Pastoral Care Chill out zones – alcohol free
College (American) Football	Drinking with peers Watching their team play/win	Violence sexual and physical from drinking	Dry Zones Chill out Zones Providing free water Alcohol venues to open at the same time as food venues Pastoral Care Chill out zones – alcohol free

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