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Participation in sports, arts and racing and its relationship to message literacy and health behaviours

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**Participation in Sport, Arts and
Racing and its Relationship to
Message Literacy
and Health Behaviours**

HEALTH PROMOTION EVALUATION UNIT



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EXECUTIVE SUMMARY

- The purpose of this study was to assess health message awareness and health behaviours by participation/non participation in sport, arts and racing (SAR) in Western Australia. In this study a 'participant' was defined as someone who was (1) a member of a SAR organisation, group or club; and/or (2) having attended a SAR event as a spectator or audience member in the last 12 months. A 'non participant' was someone who did not participate in any SAR events as a member and/or spectator and/or audience member in the last 12 months.

DESCRIPTION OF STUDY PARTICIPANTS

- In total, 6357 Western Australian respondents aged 16 to 69 years participated in this study (1998 n=1337, 2002 n=3023 and 2006 n=1997).
- In terms of participation, 17% of respondents only participated in the arts, 27% only participated in sport/racing and 39% in sport/arts/racing. Overall, 17% of respondents did not participate in any SAR events in the last 12 months.

HEALTH MESSAGE AWARENESS

- Compared with those who did not participate in any SAR events, those who participated only in the arts, who participated only in sport/racing or in sports/arts/racing were more likely to be aware of a smoking message, physical activity message, nutrition message and sun protection message.
- Those respondents who participated in sport/arts/racing possibly had a higher level of exposure to health messages than respondents who did not participate or who only participated in the arts, or sport/racing. In the case of smoking, physical activity, nutrition and sun protection messages, a stronger effect of awareness was apparent as those who participated in sport/arts/racing had higher awareness than those who only participated in the arts or sport/racing.
- In terms of alcohol/drug messages, no significant differences in alcohol/drug message awareness was found between those who only participated in the arts or sport/racing and those who did not participate in SAR events. However, those who participated in sport/arts/racing events were more likely to be aware of a alcohol/drug message than those who did not participate in SAR events.

HEALTH BEHAVIOURS

- Compared with those who did not participate in any SAR events, those who participated only in the arts, who participated only in sport/racing or participated in sports/arts/racing were more likely to exercise at recommended levels and have good sun protection practices (e.g. wear a hat, sunscreen, protective clothing).
- However, those who participated in any SAR events were more likely to get sunburnt and drink at unsafe levels than those who did not participate.
- Those who participated in the arts or in sport/arts/racing were more likely to be non smokers and to eat fruit/vegetables as recommended than those who did not participate in any SAR events.
- No significant differences were found for those who did not participate in any SAR events and those who participated in sport/racing by smoking behaviour and fruit/veg intake.

CONCLUSION

- The results of this study support Healthway's sport, arts and racing sponsorship program to promote health message literacy to those who attend these types of events. Furthermore, the results of this study suggest that participating in multiple types of events (i.e. sports, arts and racing events) was associated with higher levels of health literacy.
- Differences in participant and non-participant health behaviours were apparent. Some 'risky' behaviours (e.g. sunburn and unsafe alcohol consumption) were possibly influenced by the social and environmental aspects of participation. By the same token, the social and environmental aspects of participation also lead to health benefits (e.g. exercise). Therefore SAR participation should be encouraged and SAR events sponsored. However, the promotion of health messages should be supported by health policy and structural change to minimise negative health behaviours and positively influence the SAR 'culture' in Western Australia.

INTRODUCTION

According to the Australian Bureau of Statistics, in 2005-6, 44% of the Australian population aged 15 years and over (7.1 million people) attended at least one sport or racing event in the last twelve months [1]. The highest attendance rates were reported for Australian rules football (16%), horse racing (12%), rugby league (9%) and motor sports (9%) [1]. In terms of the arts, 4.0 million Australians (25%) aged 15 years and over attended popular music concerts, 3.6 million (23%) attended art galleries, 2.7 million (17%) attended theatre performances and 1.6 million (10%) attended dance performances [2].

Due to the high attendance rates and reach of sport, the arts and racing (SAR), health sponsorship of SAR events, organisations, clubs and groups has been used as a method for promoting health to the general population [3-5]. 'Health sponsorship' can be defined as the provision of resources (e.g. money) in exchange for the right to promote the health sponsors name, message, products or services at a sponsored event or with a sponsored organisation/club/group. Health sponsorship methods used to increase health message awareness include the use of signage, announcements, naming rights, promotional clothing, role modelling, interactive activities and promotional merchandise [4, 6, 7]. Health sponsorship in SAR settings has also been used to encourage healthy environments via structural change and the creation of health policy.

In Western Australia, The Western Australian Health Promotion Foundation (Healthway) offers SAR organisations funding and support sponsorship in exchange for the promotion of health messages and the provision of healthy environments [8]. With the establishment of the Tobacco Control Act 1990, which prohibited tobacco advertising and sponsorship, health sponsorship was initially offered as replacement funding for those SAR activities previously sponsored by the tobacco industry or as a new source of funding [9]. From July 2006 to June 2007 Healthway sponsored more than 740 projects totalling more than \$9.7 million [10]. Since its inception in 1991 and as per its legislative mandate, Healthway has spent most of its sponsorship funding on tobacco smoking control (38%) [11]. As a result, in Western Australia,

Healthway has played a leading role in promoting smoke free public places and the promotion of non smoking through its SAR sponsorship programs. Since 1991, Healthway has also spent a large amount of its sponsorship funding on the promotion of physical activity (15%), good nutrition (12%), cancer prevention/sun protection (11%) and alcohol/drug misuse (10%) [11]. In addition to the work of Healthway, there has also been numerous state and federal campaigns relating to smoking (e.g. Quit, Smarter than Smoking, SmokeFree WA), nutrition (e.g. Go for 2 & 5) physical activity (e.g. Find 30) and sun protection (e.g. SunSmart). This is important to note as sponsorship outcomes (i.e. health message literacy and behavioural outcomes) are often more effective when supported by community wide mass media campaigns [12].

As SAR sponsorship to promote health has been a major focus for Healthway for the last 17 years, it was hypothesised that a positive association would exist between those who participated in SAR events and health behaviour; and those who participated in SAR events and health literacy in terms of message awareness, compared with those who did not participate. Building on the work of Holman et al (1997) [8] and French et al (2004) [13], the purpose of this study was to assess health message literacy (awareness) and health behaviours by participation/non participation in sport, arts and racing in Western Australia. In this study a 'participant' was defined as someone who was (1) a member of a SAR organisation, group or club; and/or (2) having attended a SAR event as a spectator or audience member in the last year. A 'non participant' was someone who did not participate in any SAR events as a member and/or spectator and/or audience member.

METHOD

DATA COLLECTION

In 1998, 2002 and 2006, Healthway commissioned the Health Promotion Evaluation Unit (HPEU) to conduct three community surveys entitled 'The Survey on Recreation and Health' [14-16]. The purpose of the Survey on Recreation and Health was to provide an independent means of assessing the impact of Healthway on the general public. These surveys were cross sectional in design and comprised a series of interviews. In 1998, the interviews were performed face-to-face in the Perth metropolitan area and by telephone in the outer metropolitan suburbs and selected rural areas. In 2002 and 2006, all interviews were performed by telephone. Included in the surveys were questions relating to health behaviours; health message awareness; respondent demographics and participation in sports, arts and racing. The response fractions for the surveys were 43% in 1998, 56% in 2002 and 59% in 2006.

STUDY VARIABLES

Outcome Variables

(1) Health Literacy (Awareness)

Using unprompted and prompted methods, respondents were asked if they recalled specific health messages. As shown below, for the purpose of this analysis, health messages were grouped according to message type:

- Smoking messages: awareness of Quit and/or SmokeFree and/or Smarter than Smoking;
- Alcohol/Drug messages: awareness of Enough is Enough and/or DrinkSafe and/or 100% Control and/or Respect Yourself and/or DrugFree and/or DrugAware;
- Physical activity messages: awareness of BeActive and/or BeActive WA and/or BeActive Everyday and/or Find 30 and/or Cycle instead and/or BeActive Cycle Instead and/or Sport Safe and/or Swim Fit Asthma Fit;
- Nutrition messages: awareness of Go for 2 & 5 and/or Enjoy Healthy Eating and/or Eat more Fruit and Veg and/or Fruit and Veg Eat It;
- Sun protection messages: awareness of SunSmart.

Those respondents who recalled at least one message within a message category were considered aware of a message, thus creating a binary outcome variable (aware/unaware) for each type of message.

(2) Health Behaviours

Respondents were asked a series of questions relating to their health behaviour. These responses were recoded to create the following binary categories:

- Cigarette smoking behaviour (smoker, non smoker);
- Alcohol consumption (safe levels, unsafe levels);
- Physical activity status (exercised as recommended, below recommended);
- Fruit and vegetable intake (as recommended, below recommended);
- Sun protection status (sunburn, no sunburn; good protection, poor protection).

In this study health behaviours refer to voluntary behaviours that may positively or negatively impact on the health of an individual. It should also be noted that these behaviours were only analysed as single health risk behaviours. For each health category, risky behaviour was dependent on guidelines at the time of the survey and were defined as follows:

- Cigarette smoking behaviour (smoker): 1998-2006 smoked cigarettes at the time of the survey;
- Alcohol consumption (unsafe levels): 1998-2002 consumed five or more drinks (males) / three or more drinks (females) that contained alcohol on any day in the previous week; 2006 consumed five or more drinks (males) / three or more drinks (females) that contained alcohol on a day when they drank alcohol;
- Physical activity status (below recommended): 1998-2002 either less than five days of exercise for recreation, sport, health or fitness or less than three days of vigorous intensity exercise in the previous week; 2006 less than five days of walking/moderate exercise (150 minutes in total) or less than 60 minutes of vigorous exercise.
- Fruit and vegetable intake (below recommended): 1998-2006 consumed less than 2 pieces of fruit and/or less than 5 vegetables (2 tea cups) each day in the previous week;
- Sun protection status (sunburn; poor protection): 1998-2006 were sunburnt in the last 12 months - even just their nose or shoulders; 1998-2002 poor protection related to using sunscreen less than half the time when in the sun, in 2006 poor protection

related to individuals who did not wear a hat, sunscreen and protective clothing most of the time before going out into the sun.

Independent Variables

In this study a 'participant' was defined as someone who was (1) a member of a SAR organisation, group or club; and/or (2) having attended a SAR event as a spectator or audience member in the last year. As a result, respondents were divided into the following four categories:

- Arts only – participants who only took part in the arts (member/audience).
- Sport/Racing only – participants who only took part in sport/racing events (members/spectators).
- Sport/Arts/Racing - participants who took part in sport, arts and racing events (members/spectators/audience).
- Non participant - respondents who did not participate in any sport, arts or racing events.

Racing was grouped with sport due to small respondent numbers. As it was anticipated that Healthway may want to know the results of 'sport only' participants a sub analysis was conducted and is included in the attached tables.

DATA ANALYSIS

This study involved a secondary analysis of the Survey on Recreation and Health. Results from 1998, 2002 and 2006 were combined using SAS for Windows (Version 9). Descriptive statistics were calculated and this was followed by a logistic regression analysis to calculate odds ratios (OR). In each analysis the reference group was those respondents who did not participate in any SAR events. Measures of association between health literacy (awareness) and participation as well as health behaviours and participation were adjusted for sex, age, income, location and survey year.

RESULTS

(A) DESCRIPTION OF STUDY PARTICIPANTS

In total, 6357 Western Australian respondents aged 16 to 69 years were included in this study (1337 respondents in 1998, 3023 respondents in 2002 and 1997 respondents in 2006). As shown in Table 1, approximately one half of all respondents were female (51%) and most lived in the metropolitan area (70%). Respondent household income ranged from less than \$20000 (13%) to more than \$80000 (24%). In terms of participation, 17% of respondents participated only in the arts, 27% participated only in sport/racing and 39% in sport/arts/racing. Overall, 17% of respondents did not participate in any SAR events in the 12 months preceding data collection.

Most respondents were aware of smoking (99%), physical activity (91%), alcohol/drug (96%), nutrition (93%) and sun protection (84%) messages. The overall profile of respondents showed that the highest number of respondents were non smokers (80%), consumed safe levels of alcohol (67%), exercised as recommended (64%), ate fruit/vegetables below recommended levels (69%), had good sun protection practices (65%) but were sunburnt in the last 12 months (54%) (Table 1).

Table 1: Description of Study Participants (1998 to 2006, n=6357)

Variable		n	%
<i>Demographics</i>			
Survey year	1998	1337	21.0
	2002	3023	47.6
	2006	1997	31.4
Sex	Male	3141	49.4
	Female	3216	50.6
Location	Metropolitan	4433	69.7
	Country	1924	30.3
Age group	16 to 19	398	6.3
	20 to 24	400	6.3
	25 to 29	439	6.9
	30 to 39	1348	21.2
	40 to 49	1482	23.3
	50 to 59	1253	19.7
	60 to 69	1037	16.3

Table 1: Description of Study Participants (1998 to 2006, n=6357) cont'd...

Variable		n	%
Income	Less than \$20000	796	12.5
	\$20000 to \$39999	1172	18.4
	\$40000 to \$59999	1162	18.3
	\$60000 to \$79999	898	14.1
	\$80000+	1514	23.8
	Refused/don't know	815	12.8
<i>Participation</i>			
Participation (member/ spectator / audience)	Arts only	1071	16.9
	Sport/Racing only	1723	27.1
	Sport/Arts/Racing	2480	39.0
	Non participant	1083	17.0
<i>Health Literacy (Awareness)</i>			
Smoking Message	Aware of the message	6277	98.7
	Not aware of the message	80	1.3
Physical Activity Message	Aware of the message	5768	90.7
	Not aware of the message	589	9.3
Alcohol/Drug Message	Aware of the message	6068	95.5
	Not aware of the message	289	4.5
Nutrition Message	Aware of the message	5938	93.4
	Not aware of the message	419	6.6
Sun Protection Message	Aware of the message	5314	83.6
	Not aware of the message	1043	16.4
<i>Health Behaviours</i>			
Cigarette Smoking	Smoker	1295	20.4
	Non Smoker	5062	79.6
Alcohol Consumption	Safe levels	4262	67.0
	Unsafe levels	2095	33.0
Physical Activity	Exercised as recommended	4044	63.6
	Not as recommended	2313	36.4
Fruit and Vegetable Intake	As recommended	1968	31.0
	Not as recommended	4389	69.0
Sun Protection	Sunburn	3439	54.1
	No Sunburn	2918	45.9
	Good protection	4152	65.3
	Poor protection	2205	34.7

(B) HEALTH MESSAGE AWARENESS

Smoking Message Awareness

As shown in Table 2, compared with those who did not participate in any SAR events, those who participated only in the arts were twice as likely to be aware of a smoking message (OR 2.1: CI 1.1-4.0); those who only participated in sport/racing were almost three times more likely to be aware of a smoking message (OR 2.8: CI 1.5-5.2) and those who participated in sport/arts/racing were over three and a half times more likely to be aware of a smoking message (OR 3.6: CI 2.0-6.6).

Physical Activity Message Awareness

Compared with those who did not participate in any SAR events, those who participated only in the arts (OR 1.8: CI 1.4-2.5) or only in sport/racing (OR 2.0: CI 1.5-2.6) were twice as likely to be aware of a physical activity message. Those who participated in sport/arts/racing (OR 2.4: CI 1.8-3.1) were almost two and a half times more likely to be aware of a physical activity message compared with respondents who did not participate in any SAR event (Table 2).

Alcohol/Drug Message Awareness

No significant differences in alcohol/drug message awareness were found between those who did not participate in any SAR events and those who participated only in the arts or only in sport/racing. Compared with those who did not participate in any SAR events, those who participated in sport/arts/racing (OR 2.6: CI 1.9-3.7) were more than two and a half times more likely to be aware of an alcohol/drug message (Table 2).

Nutrition Message Awareness

Compared with those who did not participate in any SAR events, those who participated only in the arts (OR 2.2: CI 1.6-3.1), who participated only in sport/racing (OR 1.8: 1.3-2.3) or participated in sports/arts/racing (OR 2.5: CI 1.9-3.3) were more likely to be aware of a nutrition message (Table 2).

Sun Protection Message Awareness

Compared with those who did not participate in any SAR events, those who participated only in the arts (OR 1.4: CI 1.1-1.7), who participated only in sport/racing

(OR 1.9: CI 1.5-2.3) or sports/arts/racing (OR 2.2: 1.8-2.7) were more likely to be aware of a sun protection message (Table 2).

Table 2: Adjusted Odds Ratios of Participation and Health Message Awareness (1998 to 2006)

Message	Model χ^2 (p-value)	Group	n	% Aware of message	OR#	95% CI	p-value
Smoking	48.4 (p<0.01)	Arts only	1071	98.6	2.1	1.1-4.0	0.02
		Sport/Racing only	1723	99.1	2.8	1.5-5.2	<0.01
		<i>Sport only</i> [^]	(979)	(98.8)	(2.1)	(1.1-4.2)	(0.03)
		Sport/Arts/Racing	2480	99.3	3.6	2.0-6.6	<0.01
		Non participant*	1083	97.1	1.0		
Physical activity	871.8 (p<0.01)	Arts only	1071	90.5	1.8	1.4-2.5	<0.01
		Sport/Racing only	1723	91.6	2.0	1.5-2.6	<0.01
		<i>Sport only</i> [^]	(979)	(91.4)	(1.9)	(1.4-2.5)	(<0.01)
		Sport/Arts/Racing	2480	92.7	2.4	1.8-3.1	<0.01
		Non participant*	1083	85.1	1.0		
Alcohol/drug	269.0 (p<0.01)	Arts only	1071	94.9	1.4	0.9-2.1	NS
		Sport/Racing only	1723	95.0	1.4	0.9-1.9	NS
		<i>Sport only</i> [^]	(979)	(94.5)	(1.3)	(0.9-1.9)	NS
		Sport/Arts/Racing	2480	97.0	2.6	1.9-3.7	<0.01
		Non participant*	1083	93.3	1.0		
Nutrition	218.3 (p<0.01)	Arts only	1071	94.5	2.2	1.6-3.1	<0.01
		Sport/Racing only	1723	93.3	1.8	1.3-2.3	<0.01
		<i>Sport only</i> [^]	(979)	(92.8)	(1.7)	(1.2-2.3)	(<0.01)
		Sport/Arts/Racing	2480	94.8	2.5	1.9-3.3	<0.01
		Non participant*	1083	89.4	1.0		
Sun protection	546.5 (p<0.01)	Arts only	1071	80.0	1.4	1.1-1.7	<0.01
		Sport/Racing only	1723	85.7	1.9	1.5-2.3	<0.01
		<i>Sport only</i> [^]	(979)	(85.6)	(1.8)	(1.5-2.3)	(<0.01)
		Sport/Arts/Racing	2480	87.6	2.2	1.8-2.7	<0.01
		Non participant*	1083	74.6	1.0		

OR adjusted for sex, age, income, location of respondent and survey year; [^] 'Sport only' is a subset of Sport/Racing only;
* Reference group; Multicollinearity was assessed and not found to influence the analysis; NS: Not Significant.

(C) HEALTH BEHAVIOURS

Cigarette Smoking (non smoker)

As shown in Table 3, compared with those who did not participate in any SAR events, those who participated only in the arts were twice as likely (OR 2.0: CI 1.6-2.4) and those who participated in sport/arts/racing were 1.6 times more likely to be non smokers (OR 1.6: CI 1.4-2.0). No significant difference in cigarette smoking behaviour was found between those who participated in sport/racing and those who did not participate in any SAR events.

Fruit and Vegetable Intake (as recommended)

Compared with those who did not participate in any SAR events, those who participated only in the arts (OR 1.4: CI 1.1-1.6) and in sports/arts/racing (OR 1.2: CI 1.1-1.5) were more likely to eat fruit/vegetables at recommended levels. No significant differences in fruit/vegetable consumption were found between those who participated in sport/racing and those who did not participate in any SAR events (Table 3).

Alcohol Consumption (unsafe levels)

Compared with those who did not participate in any SAR events, those who participated only in the arts were almost one and a half times more likely to consume alcohol at unsafe levels (OR 1.4: CI 1.1-1.7). Those who participated only in sport/racing (OR 2.0: CI 1.7-2.4) and sport/arts/racing (OR 2.1: CI 1.8-2.5) were twice as likely consume alcohol at unsafe levels compared to those who did not participate in any SAR events (Table 3).

Physical Activity Status (as recommended)

Compared with those who did not participate in any SAR events, those who participated only in the arts (OR 1.4: CI 1.2-1.7), in sport/racing (OR 1.6: CI 1.3-1.8) and sport/arts/racing (OR 2.1: CI 1.8-2.5) were more likely to participate in physical activity as recommended (Table 3).

Sun Protection Status (sunburn; good protection)

Compared with those who did not participate in any SAR events, those who participated only in the arts (OR 1.4 CI 1.2-1.7), in sport/racing (OR 1.3: CI 1.1-1.6)

and sport/arts/racing (OR 1.9: CI 1.6-2.2) were more likely to have good sun protection practices. However, compared with those who did not participate in any SAR events, those who participated only in the arts (OR 1.5: CI 1.2-1.7), in sport/racing (OR 2.0: CI 1.7-2.4) and sport/arts/racing (OR 2.0: CI 1.7-2.4) were more likely to get sunburnt (Table 3).

Table 3: Adjusted Odds Ratios of Participation and Health Behaviours (1998 to 2006)

Behaviour	Model χ^2 (p-value)	Group	n	% Behaviour	OR#	95% CI	p-value
Non Smoker	334.5 (p<0.01)	Arts only	1071	84.8	2.0	1.6-2.4	<0.01
		Sport/Racing only	1723	75.7	1.1	0.9-1.4	NS
		<i>Sport only</i> [^]	(979)	(81.0)	(1.5)	(1.2-1.9)	(<0.01)
		Sport/Arts/Racing	2480	83.1	1.6	1.4-2.0	<0.01
		Non participant*	1083	73.0	1.0		
Fruit & Veg intake As recommended	216.8 (p<0.01)	Arts only	1071	36.6	1.4	1.1-1.6	<0.01
		Sport/Racing only	1723	25.9	0.9	0.8-1.1	NS
		<i>Sport only</i> [^]	(979)	(25.9)	(0.9)	(0.7-1.1)	NS
		Sport/Arts/Racing	2480	32.5	1.2	1.1-1.5	<0.01
		Non participant*	1083	29.9	1.0		
Alcohol consumption Unsafe levels	623.6 (p<0.01)	Arts only	1071	27.0	1.4	1.1-1.7	<0.01
		Sport/Racing only	1723	37.3	2.0	1.7-2.4	<0.01
		<i>Sport only</i> [^]	(979)	(32.6)	(1.7)	(1.4-2.1)	(<0.01)
		Sport/Arts/Racing	2480	37.5	2.1	1.8-2.5	<0.01
		Non participant*	1083	21.6	1.0		
Physical activity As recommended	210.1 (p<0.01)	Arts only	1071	60.8	1.4	1.2-1.7	<0.01
		Sport/Racing only	1723	63.3	1.6	1.3-1.8	<0.01
		<i>Sport only</i> [^]	(979)	(62.0)	(1.5)	(1.2-1.8)	(<0.01)
		Sport/Arts/Racing	2480	70.0	2.1	1.8-2.5	<0.01
		Non participant*	1083	52.2	1.0		
Sun protection Good protection	323.4 (p<0.01)	Arts only	1071	64.9	1.4	1.2-1.7	<0.01
		Sport/Racing only	1723	63.1	1.3	1.1-1.6	<0.01
		<i>Sport only</i> [^]	(979)	(63.4)	(1.3)	(1.1-1.6)	(<0.01)
		Sport/Arts/Racing	2480	71.1	1.9	1.6-2.2	<0.01
		Non participant*	1083	56.0			
Sun protection Sunburn	743.5 (p<0.01)	Arts only	1071	47.2	1.5	1.2-1.7	<0.01
		Sport/Racing only	1723	60.0	2.0	1.7-2.4	<0.01
		<i>Sport only</i> [^]	(979)	(57.9)	(1.9)	(1.6-2.3)	(<0.01)
		Sport/Arts/Racing	2480	59.7	2.0	1.7-2.4	<0.01
		Non participant*	1083	38.9	1.0		

OR adjusted for sex, age, income, location of respondent and survey year; ^ 'Sport only' is a subset of Sport/Racing only;
* Reference group; Multicollinearity was assessed and not found to influence the analysis; NS: Not Significant.

CONCLUSION

Health sponsorship in sport, the arts and racing has been a major focus for Healthway for the last 17 years. Since its inception in 1991, Healthway has spent most of its sponsorship funding on tobacco smoking control (38%), physical activity (15%), good nutrition (12%), cancer prevention/sun protection (11%) and alcohol/drug misuse (10%) [11]. In addition to Healthway sponsorships, there has also been numerous state and federal campaigns relating to smoking, nutrition, physical activity and sun protection. Therefore, the purpose of this study was to assess the association between health message literacy and health behaviours with participation in sport, arts and racing events.

With the exception of alcohol/drug messages, those who participated in any combination of SAR events were more health literate than those who did not participate i.e. those who participated in SAR events were more likely to be aware of smoking messages, physical activity messages, nutrition messages and sun protection messages. Those respondents who participated in sport/arts/racing possibly had a higher level of exposure to health messages than respondents who did not participate in any events or who participated only in the arts or only in sport/racing. In the case of smoking, physical activity, nutrition and sun protection messages, a stronger effect of awareness was apparent as those who participated in sport/arts/racing had higher awareness than those who participated only in the arts or sport/racing. These results support the findings of Saunders et al [12] as sponsorships supported by community wide mass media campaigns was associated with increased health message literacy.

In terms of alcohol/drug messages, no significant associations in alcohol/drug message awareness was found between those who did not participate in any SAR events and those who participated only in the arts or sport/racing. These results were not unexpected given that in the last five years Healthway sponsorship has mainly focused on drug messages rather than alcohol messages. However, when compared with those who participated in multiple events, those who participated in sport/arts/racing were more likely to be aware of a alcohol/drug message than those who did not participate in any SAR events. This was possibly due to a higher level of exposure to health messages for respondents who participated in sport/arts/racing.

In terms of health behaviours, those who participated in SAR events were more likely to exercise at recommended levels and have good sun protection practices than those who did not participate in any events. However, those who participated in SAR events were more likely to get sunburnt and drink at unsafe levels. Those who participated in the arts or in sport/arts/racing were more likely to be non smokers and to eat fruit/vegetables as recommended than those who did not participate in any SAR events. No significant associations were found for those who did not participate in any SAR events and those who participated in sport/racing by smoking behaviour and fruit/veg intake.

In summary:

- The results of this study support Healthway's sport, arts and racing sponsorship program to promote health message literacy to those who attend these types of events. Furthermore, the results of this study suggest that participating in multiple types of events (i.e. sports, arts and racing events) was associated with higher levels of health literacy.
- Differences in participant and non-participant health behaviours were apparent. Some 'risky' behaviours (e.g. sunburn and unsafe alcohol consumption) were possibly influenced by the social and environmental aspects of participation. By the same token, the social and environmental aspects of participation also lead to health benefits (e.g. exercise). Therefore SAR participation should be encouraged and SAR events sponsored. However, the promotion of health messages should be supported by health policy and structural change to minimise negative health behaviours and positively influence the SAR 'culture' in Western Australia.

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